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NATURAL

LIFE AND HEALTH

AND THE

DUPLEX SYSTEM

OF

PHYSICAL TRAINING

BY

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MODERATION

is the one-word motto of the physical trainer. Be moderate in all that you do, for extremes lead to destruction.

THE IMMUTABLE LAW

Anything that is still is dead. When the sap fails to rise in a tree, it rots. A pool of water with no current stagnates, and so when anything in nature stands still it withers and dies. Life means action. The human body is no exception to the rule; let it remain idle and it deteriorates. The student who, after graduation, fails to exercise his brain, loses a part of his knowledge. Prolonged inactivity is certain death.

To possess and maintain a perfect human machine means work; regular, systematic, daily, physical exercise. Nature is indifferent to laziness. Nature heeds not a weak will power. Nature hears no arguments against her dictates. Nature is inflexible and immutable. Violate her laws and you cannot escape the penalty. You must exercise the body or suffer the consequences.

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Part I

Natural Laws of Health and Exercise

Marcellus T. Hayes

FOREWORD

(1) Health is the foundation upon which a happy life depends. A weak body can never experience permanent joy. Neither wealth nor intellectual attainment can be a substitute for health; and without it, satisfied ambition, social conquest, and business success, avail but little.

The man who suffers from periodical headaches, indigestion, nervousness, insomnia, or other indispositions, must regard many days of his life as irksome and unsatisfactory.

There is one great reason why so many of the human family are forced to drag themselves through wretched days: **The lack of physical exercise.**

(2) Although disease has been checked by sanitary regulations and the science of hygiene, still there are any number of individuals who do not always feel **just right.** Men of sedentary life often find themselves in a state of physical weariness and mental lassitude. In such cases, the blood currents should be forced into vigorous circulation, and more life-giving oxygen should be pumped into the lungs

by muscular action. Ten minutes a day in physical exercise is a simple remedy to offer, but the result would be most salutary and gratifying. In a short time the worn body would change to one of renewed vigor and greater functional capacity. Man would soon "feel like himself" and thoroughly enjoy every hour of his existence.

To experiment requires but little time. Is it worth while to make the test?

(3) To exercise the muscles a few minutes every day is such a simple matter that there is no excuse for any man or woman to suffer from the penalties of inactivity. Physical life demands action; it is a vital requirement of Nature's plan, and whosoever fails to comply with the laws governing existence must forfeit a part, at least, of the joy of living.

(4) The road leading to physical perfection, personal beauty, tinted complexions, rounded forms, and symmetrical contours, is not hidden by mysteries nor handicapped by ridiculous self-denials. **You** can improve the condition of your body by realizing the necessity of regular sleep, moderate eating, pure air, and daily exercise. It is better to present an attractive appearance than to be one of the vast army of the ordinary. Many dream and talk of the ideal, yet only a few live up to what they think and preach. Happy is the man who has the will to follow his own philosophy.

(5) Muscular action being the first essential to the ideal physical structure, it is important to consider briefly its effect:

Muscular action accelerates the blood, causes deep breathing, promotes perspiration and forces impurities to the surface of the skin. It carries new tissue, through the blood, to the muscles moved, and takes away, by the same process, the oxidized tissue. Muscular action quickens the muscles and strengthens the ligaments and cartilages of the bones.

It aids digestion, fortifies the nervous system, and, therefore, improves the will power. It makes it easier for the mind to rule the body, dispels ennui, annihilates weariness, and gives a fresh and energetic tone to the mind and the body. It affords the greatest rest for a tired and over-worked brain.

Muscular action fits the body to act on the impulse in doing the dictates of the mind. It also stands as a barrier against dissipation; and, in connection with practical, everyday, natural life, it means common sense physical training.

(6) It is not necessary to be an athlete or a gymnast to enjoy good health; but those who have never felt the exhilaration, vigor, and bubbling-over energy of an athlete in perfect condition have missed an experience that nothing can replace. Such a condition can be attained only by training; but

its results can never be entirely lost, nor the pleasure of the experience forgotten.

Physical exercise cannot, regardless of conditions or environment, cure all the ills of the body as if by magic. But it is proved by experience that muscular activity is a blessing to the average man or woman.

The Duplex System of Physical Training offers to you the best combinations of simple exercises, and an epitome of the best laws governing health. In a word, it is the quickest, safest, and most natural way to build up the body. This is a bold claim; but wisdom gained from knowledge, from experiment, and from observation, is worth more than paper theories, however beautiful they may appear in print. For twenty years I have tried the various methods of improving the physical man, and the Duplex System is the reward of my labor. It has value only in its simplicity and because it is the primary design of nature.

(7) If one does not think, his mind becomes rusty, slow, and incapable. If you do not exercise, your muscles cannot and will not grow. You must work to get strong; and if you do not work, your muscles will remain weak and undeveloped. It does not make any difference what is said or believed about this subject, the facts remain just the same! And since this physical law cannot be changed, we are inevitably consigned to one of two classes of men: the **weak**, or the **strong**. Unfor-

tunately the army of the weak greatly outnumbers that of the strong. Many are thoughtless and lapse into indifference; others, apparently, have not sufficient will-power to carry out the convictions of their own minds. This I know—the normal man has no excuse for physical weakness. It requires only a little effort to get away from the commonplace and prepare yourself for enlistment in the ranks of the robust. The return for the effort is more than generous. Besides the keen satisfaction of advancing your condition, think of the greater utility of a stronger physical machine.

If you can always "feel fine" in doing your share of the world's work, is this not preferable to even occasional depressions? No one delights in that "tired feeling," yet it is one of the burdens to be borne, at times, by the numberless army of the weak.

(8) The trained man always has the advantage. He can do more work and better work. Therefore, his business is more profitable. He has the advantage in personal magnetism on account of an attractive appearance. The genial, jovial, well-built man is the popular man in business and in society —his success in life is assured.

He has the advantage in self-reliance and self-assurance. He is never "caught off his guard," because he knows no fear. In cases of accident or danger he meets the emergency with a cool head. He generally escapes where others succumb. He

realizes his superior physical prowess, and his daily life is lived in a feeling of security.

I repeat, that the rewards of muscular exercise and practical training are so numerous that no man or woman can afford to brush them aside.

THE MIND AND BODY

"The first requisite in education is to be a good animal."—Herbert Spencer

"The basic elements of education must be physiological."—Horace Fletcher

The mind and the body are closely connected. It must be remembered that the brain is a physical substance and kept alive by the blood of the body. The blood circulates through the brain and supplies it with new material, just as it carries off the oxidized tissue, or waste matter. This same blood also circulates through the muscles and organs. Now, if the muscles and organs (particularly the stomach and digestive machinery) are in a state of health and purity, there is no danger of the blood becoming contaminated and carrying to the brain any unclean substance. The brain is therefore free from clogs and "cobwebs"—free to perform man's greatest work.

There can be no mind without matter during an earthly existence. Remove the brain from the skull of a living person and the mind dies with the body. Change the matter of the body, or any part of the body, and you change the mind. A germ of disease turning healthy flesh into unhealthy flesh affects the mind. A burned-out, dissipated body is generally the habitation of a dissolute, degenerate, immoral mind, devoid of character and

force, drifting here and there according to desire, without any restraint. Conversely, as a rule, you will find a healthy state of mind in a well-developed, cultivated, muscular frame. There are many examples showing the effects of bodily changes on the mind. Is it not a fact that old age notoriously impairs the memory of ninety-nine out of a hundred? What is the physical condition of old age? The answer is simple: Lost vitality, shrunken muscles and wrinkled skin. If physical conditions do not affect the mind, why do we say so frequently that old persons are in their dotage, or second childhood? Again, we have such facts as the dependence of our feelings and moods upon hunger, repletion, the state of the stomach, fatigue and rest, pure and impure air, cold and warmth, stimulants and drugs, injuries and sleep. How often do we hear a person say when called upon to exert his mental force, "I cannot think, I am tired?" Again, what is the natural result of a social gathering, after all stomachs are full, but an exhibition of after-dinner oratory? And who has not seen the effects of alcoholic liquors in stimulating the mind to foolish activity? All of these are chemical or physical changes affecting the mind. Many other illustrations could be given, but it is not necessary.

Mental changes equally affect the physical condition, showing again the direct connection between the mind and the body. Sudden outbursts of emotion derange the bodily functions. Fear paralyzes

the digestion. Great mental depression enfeebles all the organs. Protracted and severe mental labor brings on disease of the bodily organs. On the other hand, happy outward circumstances are favorable to health and longevity.

Now, if the mind and the body are inseparable, you must enhance the mental faculties by cultivating, beautifying and developing the physical. Character and civilization depend upon the best condition of the mind. The perfect mind exists only in the perfect body. There can be no ideal man so long as there is a deficiency, either in mind or body. It is true that some intellectually great men have had weak bodies, and many powerful athletes are stupid, but these are exceptions. If the intellectually great men who are physical weaklings possessed athletic frames, their mental powers would be greater in proportion. It is an easy matter for one to cultivate exclusively and excessively the mind, or, vice versa, the body. When the mind is neglected, the body becomes gross and stupid. When the body is neglected, the mind becomes abnormal, and we see the man launched into a world of unreal, unsound and extravagant ideas. Pascal and Voltaire were brilliant men with feeble constitutions, yet Themistocles, Alcibiades, Socrates and Plato excelled in the exercises of the gymnasium; on the broad shoulders of Plato rested the most intelligent head of all Greece. Witness, too, nearly all the great men of Rome; Setorius swimming, in

full armor, across the Rhone; Caesar in Gaul, Pompey, etc.

I have never seen a well-built man in my life who did not possess a certain kind of tenacity, grit and determination to overcome things. In fact, this determination to master the situation is so essential that few, if any, athletes or gymnasts have ever become experts without it. Furthermore, this determination to surmount the difficulties of physical feats becomes so much a part of the nature of an athlete, that upon analysis it is found to be one of his dominant psychological developments. I knew a man (an athlete) of gigantic will-power who frequently resorted to strange performances to prove the mental control over his body. For example: I have known him to get out of bed at 2 o'clock in the morning and walk ten miles, regardless of weather. As a further test of his remarkable will-power, he gave himself such tasks as learning the English definition of every word in the Latin lexicon within three days, which he successfully accomplished. Such will-power developed in any normal man almost to a certainty precludes his doing anything foolish or detrimental.

We are now living in an age when men are looking toward the ideal. The ideal can never be reached, except through the perfect physical man.

NATURE'S REMEDIES

For ninety-nine per cent. of the small ailments of life Nature provides a remedy. In fact, there would be no ailments (large or small) if there were no violations of the laws of life. The human family have inherited the physical sins of their fathers since the beginning of time. This is a handicap placed on the living of the present age. But we can, by our efforts, lessen the handicap, if not obliterate it, for our posterity. When the effort to advance the physical condition of future generations becomes universal, then the ideal man will be in sight. In following the laws of natural selection between the sexes, men and women should thoroughly consider the physical qualities of their prospective mates. If there are no defects of blood, bones, nerves, or muscles, nature still demands that the good condition shall be made better by work—physical activity.

It is due to the lack of work, in most cases, that the small ailments appear. The mind becomes apprehensive of more serious trouble and a doctor is consulted. The doctor is practicing medicine for a living; and the doctor knows that unless he gives you a drug in the shape of a pill or a fluid, you will think less of him as a physician. Sometimes the doctor satisfies the mind of his patient by administering a sugar-coated bread crumb. It is a part of the doctor's business to look wise, use

terms that you do not understand, and charge a fee. But the doctor knows all the time, what you ought to know, that nature will bring you back to normal condition, especially if you are careful.

You cannot blame the doctor. He is forced by circumstances to satisfy the demands of his patients, particularly those who imagine they are sick, or those who suffer only from petty illness. If the doctor bluntly told you the truth—that all you needed was exercise, fresh air, and moderate diet—you would look for another M. D. and a pill box. This is the reason for the prevalence of the drug habit (one of the most pernicious habits of modern civilization), a habit that speaks ruin for many persons. For the slightest disorder of the stomach or intestines, a pill or nostrum is taken. At the first sign of a headache, a pellet, wafer, or powder, is called for and swallowed. And so on down the list of simple and imaginary disorders—there are a score or more of drug remedies for each. The seductive part of these drug cures is in a temporary relief. But the physical condition is so weakened after each application that finally the patient becomes a slave to the drug and cannot exist without it.

Nature's remedies are better and more hygienic, and cost you nothing in the way of money, but you will not realize this fact. However, a certain newly-organized religious sect grasped this idea, and by tacking it on behind a theological dogma

of "faith," it has grown to a mighty position of wealth and splendid influence.

Do not drug yourself upon the first sign of a breakdown, cold, aching joints, indigestion, or nervous twinge, but live quietly and moderately for a few days and give nature a chance to restore you to normal health. It isn't a matter of medicine, it isn't a matter of "faith," but simply a matter of common sense. Try it!

I do not underestimate the true science of medicine, nor the seeming miracles of surgery. Honest physicians are necessary, and it is due to them that we live in security against contagious diseases and plagues. Germ diseases, nervous disorders, broken bones, and other serious ailments, require the services of competent medical men. But for the trivial indispositions let nature do the work.

Nature's remedies may be set out concisely as follows:

1 Physical Exercise
2 Sun Baths
3 Water Drinking
4 Bathing, Massage, and "Rub Down"
5 Deep Breathing
6 Fresh Air
7 Moderate Diet
8 Freedom from Worry
9 Sufficient Sleep
10 Moderation in All Things

1 You may learn how to exercise intelligently by consulting the pages of this book devoted to practical physical training. It is not only important that you learn how to exercise properly at home, but I strongly recommend that you spend at least two hours a week in some well-conducted gymnasium. It will pay you.

2 There is no better summer medicine than Nature's greatest tonic—sunshine. Take sun baths. On the first day, expose the body to the sun fifteen minutes. Increase the time daily until the exposure can be endured for one or two hours. Let the skin become thoroughly browned.

3 Drink a glass of hot water just before going to bed, and from one to three glasses upon rising. It prevents constipation, washes out the stomach and intestines, cleanses the bladder and kidneys, and aids digestion.

A glass of hot water with every meal will strengthen a weak stomach. It is best that the water should be boiled and cooled to a drinkable temperature. The habit of drinking cool water **between meals** is excellent. Drink from a half gallon to a gallon per day. If you are thin and wish to gain in weight, drink water plentifully and exercise regularly. Any pure water will do; the virtue is in the quantity taken, and not in the long chemical analysis of so-called spring waters. There is no advantage in any kind of spring water bottled up from one to four weeks.

Distilled water is water with the life taken out of it. Do not drink distilled water if you can get any other pure, natural water.

4 See page 45

5 See page 44

6 Exercise in the open air as often as possible. Such recreation and games as horseback riding, golf, tennis, skating, swimming, rowing, sailing, etc., etc., are admirable and will add many years to ordinary life.

7 See page 29

8 Certain conditions of adversity or ill health will stir up the unpleasant side of the most philosophical mind; but, as a rule, we can school ourselves against useless worry. If we make it a practice to cultivate cheerfulness, many events, over which we have no control, will appear in a brighter light. Since life is largely a matter of habit, the sensation of a smile is more favorable to longevity than the irritable frown. The smile and the frown are outward evidences of inward feelings. The tendency of the one is to make you happier, and therefore better mentally and physically; while the result of the other is to make you miserable, sap your vital force, and shorten your days. Encourage the beneficial habit—it is good training for mind and body. Read Fletcher's "Menticulture, or the A B C of True Living."

10 Moderation is the keynote of a useful career with reasonable contentment. The extremes of tee-

totalism and puritanism do not appeal to the practical mind. Only a few people adopt the strict fads of certain societies. Temperance and moral bodies lose a part of their influence by planning and advocating narrow grooves of conduct. Every one must observe certain divine, civil, and natural laws. No prodigal son offers arguments against the fundamental principles of existence.

But the man of the world who is neither bad nor ultra-pious resents the attempt to interfere with his personal liberty. He also regards such attempts as reflections on his intelligence, for he knows that his habits are harmless if he does not carry them to excess. Liberty is the right to do what one pleases without infringing on another's right. Reformers, good men and women, should strike at the evil of a custom, and not at the custom itself.

The use of tobacco and of alcoholic beverages may not be best for physical trainers, but it is a fact that for centuries men have indulged in these pleasures moderately without any apparent detriment. The nations of to-day are stronger physically than the ancient races; and the athletes of the present time are far ahead of the old gladiators of Greece and Rome.

It appears that tobacco and spirituous liquors are here to stay; let us make our crusade against drunkenness and over-indulgence and we shall succeed. To recapitulate, be moderate in all things, for extremes lead to destruction.

DRUGS—MEDICINE

Physical Weakness and Death to those Who Swallow the Stuff

Myriads of human beings are searching for remedies to improve their physical condition. Otherwise, there would not be over 35,000 proprietary and patent medicines on the market in the United States. Millions of dollars are spent annually on these death-dealing agents. Are you one of the victims? Are you throwing your money away on quack swills and tinted pills? If such is the case, every dose you take is an invitation to the undertaker to place you on his list of "interesting persons."

Do not be deceived by the fair promises of clever advertising. The claims of healing and up-building are lies with few, if any, exceptions. You will find this out, if you have not already found it out. There is absolutely no hope in advertised drugs and medicines. As a rule, the various mixtures are not only useless but harmful, and if you continue to use them, your condition will get worse instead of better.

If you do a thing through ignorance, it doesn't mean that you are foolish. It means that you are not properly informed. But after you have been warned—after you **know**—and you continue the old habit, your case is hopeless.

The "medicine man" of ancient times, among the savages, as well as among the so-called civilized, was a powerful factor in his community. He brewed concoctions from poison-weed, wild berries, tree roots, snake skins, and from the earth's vermin in general. Not infrequently all of these "ingredients" were placed in one pot, and while the boiling was in process, he made mystic passes over it, and invoked the supernatural to bless his "healing potion." When the job was finished, his "brew" was "dispensed" among the trusting dupes to cure any and all of their ailments. In our time, we know that such a "practice" was absurd, while the humor of the ancient and savage custom makes us smile. The "medicine man" to-day, under the guise of "science" and "chemistry," is performing the same old tricks, and, like his ancient colleague, easily gets his price.

Discard your drugs, throw your pills away, and get back to nature, if you wish to regain lost health and strength.

"Natural Life and Health and the Duplex System of Physical Training" will help you, if you are not a chronic invalid or a candidate for a hospital.

My system of Life and Training will also make the strong stronger and add health to the healthy.

FOOD

That terrible dragon, diet, is a phantom of the past. It is not only what a healthy man eats that is essential, but the quantity he eats, and the manner in which he eats.

Overeating will destroy the strongest digestive apparatus.

Masticate the food thoroughly. Do not hurry through your meals.

If you crave a certain food, eat it. If it is hard to digest, eat sparingly of it.

Rich foods should be eaten with a great deal of discretion.

If your stomach is weak and the flow of gastric and pancreatic juices is slow, it is best to rely on plain and simple foods.

If you are training for a contest and desire to gain the greatest amount of strength and endurance in the shortest possible time, refuse all rich foods, condiments, relishes, etc.

A man having a predisposition to fatness should avoid starchy foods. But it must be remembered that fat is extra food and fuel laid up in the storehouse of the body to be used in cases of exigency. Every one should possess a normal amount of fat, but when it accumulates in lazy places it is a surplus and a burden. The old-time trainers endeavored to get rid of every particle of fat, even resorting to purgatives. This was an error, and

many a man was wrecked for life as a consequence.

Drink plentifully of water between meals, but avoid excessive drinking at meal times. One glassful should generally be sufficient at a meal. Too much water dilutes the gastric juice and other digestive secretions.

It is better to use hot drinks at meal times, as the stomach is kept warm and digestion made easier.

Do not drink ice cold water at any time. Cool water in hot weather is refreshing, and the water should be sufficiently cool so as to make the drink enjoyable.

In most cases the feelings of the body are an indication as to what to do and what not to do under certain circumstances.

The science of eating should receive as much attention as any other science. We must eat to live, and unless we eat properly we deny ourselves the chance of the greatest health, happiness, and usefulness. We should not be ignorant as to the value of the various foods. Certain food combinations are necessary, daily, to maintain the normal strength, energy, and life of the body. What percentage of the people know what these food combinations are, how they should be prepared, and when taken? Custom and habit have regulated diet more than knowledge. How many athletes, or other trainers, know anything in this respect?

Very little is known of this science, which should be a subject of universal knowledge. People eat indiscriminately—anything that happens to please the taste is allowed to enter the stomach regardless of the chemical action that is to follow.

The greatest pleasure in eating is in the natural savor of a wholesome food. All healthy people have appetites sufficiently keen to enjoy nutritious meals; and he who departs from nature in cultivating detrimental tastes, does so at the expense of this pleasure, and gives the body a start towards physical decline.

Overeating and hurrying through meals are two great points of error. A noted writer says: "It has long been my opinion that light eaters make long livers." Business men hurry through their meals in the morning and at noon, and the food (not always the best) is swallowed in lumps, as it were, as there is no time for mastication. And the business man soon begins to break down, his stomach is upset, other diseases make his case more complex, and he is forced to retire from the field of activity. An eminent physician says: "More people suffer from the derangements of their digestive organs than from any other class of diseases; and many of the other ailments we suffer are indirectly traceable to the same source."

Health is impossible without a good digestion, and a good digestion cannot last long with the free use of improper foods. The strongest athlete can

ruin his stomach and intestines in two months by reckless eating, and do so unconsciously by eating just a little too much and partaking of rich food combinations without any food value.

The questions now arise: What are the proper foods for a person of normal health? What quantity should be taken into the system in twenty-four hours? How often should we dine in a day? And how should our meal hours be arranged? These questions are of vital importance to everybody, and particularly to the athlete who is training for a contest and who desires to possess the greatest endurance or speed. He who presents the best form in any field game, or in a gymnastic hall, must know how to eat scientifically.

A noted chemist makes the following analysis:

"Three classes of food elements are especially required for the perfect nutrition of the body, viz.:

a. **Proteids,** represented by albumen, gluten, fibrin, casein, found in the white of an egg, lean meat, the curd of milk, the gluten of wheat. Proteids are also found abundantly in all the legumes, peas, beans, lentils, and especially in nuts.

b. **Fats,** found in very limited quantities in grains, but very abundantly in nuts.

c. **Carbohydrates,** represented by starch and sugar in various forms. These elements are found in combination in most vegetable foods, but in greatly varying proportions.

Grains contain starch and proteids, very little sugar, and practically no fats. Fruits contain sugar, dextrin, usually acids, very little albumen, and no starch or fats, with the exception of the olive, which contains fat.

Nuts contain a large amount of proteids or albumen—more than an equal weight of beefsteak—about fifty per cent. of their weight of fats, practically no sugar, and no starch, with the exception of the chestnut, which contains a large percentage of starch, in this respect resembling the acorn.

The **legumes** (peas, beans, lentils) contain a large amount of starch and a very high proportion of proteids, more, in fact, than are found in ordinary flesh foods.

Vegetables, like the potato and other fleshy roots, consist chiefly of starch, a very small amount of proteids, and no fats.

Proteids are necessary for the building up of the blood and the active tissues—the muscles, nerves, etc.

Fats and carbohydrates are necessary to maintain the heat and energy of the body.

By experiments upon a large number of persons, we have found that the average amount of water-free food required per day is about twenty ounces, of which fourteen per cent. must be proteids, six per cent. fats, and eighty per cent. carbohydrates. In other words, one must eat daily of water-free proteids, 2.8 ounces; of fats, 1.2 ounces; of starch

and sugar, 16 ounces. This quantity is best taken at two meals, about equally divided between the two. It is impossible to eat physiologically and eat more than twice a day, unless one exercises great care to take articles that are capable of being very quickly digested."

It is not my purpose to enter into the minute details of diet and to point out the exact foods that each individual should eat, or to particularize saying that this or that food is digestible or indigestible. The same class or combination of foods is not good for everybody, because there are variations in the anatomical compositions of the human family. There are some instances where the same kind of food will cause different chemical precipitations in different stomachs and intestines. Therefore, after learning in a general way what the elements of nutrition are, what combinations are best, and what quantity should be taken daily, one must be his own guide in arranging a wholesome bill of fare.

The endeavor is made here to take a liberal and broad view of this subject. There is no desire to antagonize the "Vegetarian Idea," yet the majority of the human race are not ready to accept the theory as absolutely correct. A very good way to settle this question in individual cases is by fair experiment.

In thinking over and studying out the problem of foods, we must consider the climatic conditions,

the amount of mental and physical labor, and our general habits. What we do in life will largely determine what we should eat, how often, and the quantity. The advantage in knowing what are the elements of nutrition will enable us to discriminate between the good and the bad—the wheat and the chaff. Much useless stuff is taken into the system only to call on the fires of life for its consumption. Many cases of dyspepsia and disease are traceable to the chaff devoured by mankind.

As a rule, sauces, catsups, pickles, sweet-meats, pastries, pies, plum-pudding, coffee, tea, and desserts in general, have little or no food value from the standpoint of nutrition. These foods and all rich combinations should be consumed only in very limited quantities.

Men doing physical work should eat more and more often than the office man. A laborer requires three meals a day, while the brain worker will fare better on two. It may be that the brain worker needs a light luncheon at mid-day, but this is a matter for the individual to decide. Men in cold climates require more fats, men in warm climates do not need so much; and thus the food problem is a matter of environment, after learning the first principles.

"There is, perhaps, no single food in nature which contains all the elements necessary for the healthy maintenance of the body, and in just the right proportion. It is hence necessary to com-

bine different food substances in such a manner that the deficiency of one will be complemented by the surplus of another. Such a combination will constitute a well-balanced or symmetrical menu. In combining food substances, it is also well to regard the law of compatibilities from a digestive standpoint, remembering that fruits and milk, milk and vegetables, milk and meats, are not good combinations, and are highly promotive of indigestion, and also that fats in a separated or unemulsified state are very prone to produce indigestion, disagreeing more or less with all other food elements. It is for this reason that butter, lard, suet, and oils, so often provoke indigestion, whereas fats in the form of cream and milk are readily assimilated."

Raw starch is hard to digest. It is therefore necessary that all starchy foods should be well cooked. The use of oatmeal as a breakfast dish in America is doing much to weaken the physical man, contrary to the popular idea that to eat oatmeal is to get strong. Because ninety-nine per cent. of the oatmeal consumed in the United States is nothing more than half-raw starch, which affords very little nutriment for the body. There is more food substance in the milk, cream, and sugar than in the oatmeal. Oatmeal should be cooked from three to four hours, and many claims made by flake manufacturers that their products can be prepared in ten or fifteen minutes are unreliable.

Ordinary bakers' bread should stand from one to two days after baking before being eaten; otherwise, it should be thoroughly toasted. The most digestible part of bakers' bread is the brown crust, which is thoroughly cooked.

The following suggestions may help you in establishing a "training table":

BEST WAY TO PREPARE BEST FOODS

Roast	Beef
	Mutton
	Fowl
Broiled	Chops (Mutton, Lamb)
	Fowl
	Beef-steak
Broiled	Fish
Baked	Fish
Soup	Beef
	Bean
	Pea
	Rice
	Macaroni

(Note: All soups, as a rule, are good. Clam chowders and milk and vegetable combinations may be questioned at times.)

- Vegetables
  - Boiled
  - Baked
  - Stewed
- Fruits
  - Natural
  - Stewed
  - Baked
- Eggs
  - Omelette
  - Scrambled
  - Boiled (soft medium)
  - Poached
- Oysters
  - Raw
  - Stewed
  - Steamed
- Bread
  - Toast
  - Corn-bread
  - Crackers
  - Bakers' bread (one or two days old)

(Note: Fried foods are more difficult to digest.)

(Note: All of these foods may not suit your case perfectly; if you require a change, make it.)

Questionable Foods from a Training Standpoint

Meat	Pork Veal Ham Corn-beef Pig Bobveal Young animals in general Hash, or cooked-over meat Croquettes (fried in grease) Stewed meat (well done)
Clams	In any form
Fish	Salt Pickled Fish cakes (fried in grease) Crabs Lobsters Scallops
Fruits	Pineapple Plums (unless thoroughly ripe) Preserves (sweetmeats)
Vegetables	Fried Slaw Combination salads (with excessive oils and dressings)

Bread	Hot rolls Fresh baked Doughnuts Pan cakes
Pastry	Pies All kinds of fancy colored sugar coverings, icings, etc.
Desserts	Many desserts are questionable. The stomach is practically filled by the time this course is reached, and very often the dessert is a superfluous burden.

It is not meant here that you deny yourself, absolutely, all the foods under the "questionable" heading. But you are cautioned to consider the effect of these foods, and if you find any of them useless or injurious, strike them off your list.

The above is a brief outline to help you solve your own particular food problem.

EATING—CHEWING

Eating is the foundation of life. If you do not eat, you cannot live! Do not be one of the many who simply live to eat.

The secret of a robust, healthy body is simplicity itself: chew, **chew** what you eat; **chew** till the muscles of your jaws become tired, and you will

not distress the muscles and membranes of your stomach and intestines.

Mixing saliva with your food by chewing it to a soft gruel before swallowing will prevent and cure indigestion, dyspepsia, and all stomach and intestinal complaints.

If you eat hurriedly and swallow a part of your food in lumps, fermentation follows, putrefaction begins, and in time you will suffer all the ailments of food poisoning.

If you let your food rot inside of you, there is no hope for you. Perfect mastication prevents and cures the putrefying process.

Chewing thoroughly what you eat makes assimilation easy; the food goes where it belongs and builds up and strengthens the body. Chewing your food will knock out bad breath, bad taste, flatulence, and distress.

Any physician will tell you that indigestion is the primary cause of 90 per cent. of all human ailments. It has been proved that the chewing habit will increase one's mental and physical energy 30 per cent.; also, it will reduce the cost of food supply 20 per cent. Chewing prevents over-eating.

If it is your present custom to dispose of a meal in fifteen minutes, double the time, or, better still, triple it.

Putrefaction in the intestines is one of the causes of sallow complexion and the chief cause

of premature old age. The law is simple: **chew,** CHEW, CHEW when you eat. Observe this law two days and you will be convinced. Eat no meat for breakfast. 'Tis better to eat meat only once a day.

Clinch this first law of Natural Life and Health in your mind, and you will be in a position to receive all the benefits of the other simple things of Nature.

We must eat to live, and to live in a perfect state of health, we **must eat properly.**

These are the most important facts about diet; and if you will heed them, exercise and train properly—which is nothing more than sensibly taking care of the physical machine—you will gain in strength and health, and what is more important, you will retain these two peerless blessings.

CLOTHING, BREATHING, RUNNING, BATHING, SLEEPING

Do not wear clothing too heavy and thick. A healthy man does not need thick flannel underclothing, nor is flannel essential to the body in its normal condition. Wear light weight undercloth-ing winter and summer. Meet "cold snaps" with thick winter outside suits and overcoats, and colds will be far less frequent. There is only a slight variation indoors between the temperature of the winter and summer. Heavy clothing, which would cause perspiration and an opening of the pores of the skin indoors, is certainly not needed. In going out the body can be kept comfortable with the necessary outside wraps. A person in a state of perspiration, with pores open, coming in contact with the raw winter air, is exceedingly likely to catch cold.

Do not wear clothing too tight at the waist or at the chest; leave plenty of room for deep breathing.

A shoe that pinches your foot and retards circulation is a drawback to good training.

Never work in the gymnasium or on the athletic field without a "jock strap." It is a precaution against rupture.

BREATHING

Breathe through the nose. Breathe through the month only when extreme physical effort makes it necessary. In walking or doing ordinary work it is better to breathe through the nose. Take the breathing exercise often.

Breathe so as to fill every one of the cells with pure air. Do not mistake short, quick gasps for normal breathing. The majority of people rarely ever bring the remote air cells into use, on account of improper breathing.

The air (oxygen) is the great purifier of the blood. The more lung surface used, the greater the cleansing process. The largest and strongest animals in the world breathe from six to ten breaths per minute, the smallest and weakest animals breathe from two hundred to three hundred breaths per minute. The deduction from these facts shows that the air we breathe, and the manner in which we breathe, are important factors in developing human strength.

Reducing the respirations to ten per minute for five consecutive minutes three times a day will insure full breathing.

Take a long, deep breath and hold it in the lungs a few seconds. Repeat this as often as you please. Increase the time for holding the breath each day until one minute or a minute and a half is reached.

Breathing is a great stimulant to unused lungs;

therefore, be careful not to become dizzy by taking too much of this exercise at first. Breathing exercises will increase the exterior chest as well as develop the interior.

Also see page 109

RUNNING

Every one should learn to run. Begin slowly and run only a short distance. Breathe generally through the nose. Gradually increase the distance each day, but do not fatigue yourself. Running will develop powerful legs and chest, and probably there is no single exercise so good for the "wind."

BATHING

"Cleanliness is next to godliness."

Take a bath every day. Don't wait to cool off —get under the shower while your blood is warm and body perspiring.

If you are exhausted do not take a plunge or swimming bath. In fact, take very little of any kind. A quick sponge bath is the best when tired.

A person bathing every day needs very little soap.

Any bath that fails to refresh the body or promote the bodily comfort is deleterious instead of beneficial.

Let a vigorous rub down follow the bath—one minute for bath, five for rubbing down. Rub until the skin assumes a ruddy hue.

Only the strong and those capable of a quick reaction should take a cold bath.

A hot bath, with soap, should be taken twice a week; other baths daily.

Proper bathing after exercise assures continual good health.

The shower bath is the best for everyday bathing and ordinary purposes.

Healthy people should generally rinse off with cool water in all baths where hot or warm water is used.

The sponge bath is akin to the shower in convenience and usefulness.

The plunge or swimming bath is probably the most enjoyable of all. Avoid staying too long in the water. Five to fifteen minutes is quite long enough. Come out before you feel chilled or numbed; come out before you feel tired or exhausted.

A feeling of lightness and ease is the best index that a bath has been a benefit.

SLEEPING

There is an old maxim which says eight hours for work, eight hours for recreation, and eight hours for sleep.

As a general rule from six to eight hours' sleep is enough for an adult. Have a certain hour for retiring and a certain hour for rising.

Let plenty of fresh air into the sleeping room.

A mattress on a spring is the best bed.

Sleep mostly on the right side. Breathe through the nose and keep the mouth shut.

PRIMARY LAWS CONCERNING BODILY EXERCISE

1 Exercise for health and strength will follow. Normal strength necessarily accompanies health.

2 Begin all exercises slowly, and work moderately until the blood becomes heated and accelerated. Heavy or severe work or "spurting" should be executed about the middle of the time set aside for bodily exercise. All work should have a moderate ending.

3 Excessive exercise is injurious and should be avoided. Excessive exercise and no exercise at all might be said to produce similar results.

4 Stop exercising just before nature calls out strongly against further bodily activity. Just reach the tired point and stop before exhaustion.

5 No law can be laid down as to how much exercise should be taken at one time. Every individual must be a guide to himself.

6 When exercising with light weights make quick movements. Do not abandon the heavy weights. When out of training never try your limit of strength. Heavy weights and heavy work properly indulged in make strong muscles. Light weights and light work make quick and elastic muscles. The two systems sensibly combined, according to experience, give the quickest development. Strength, endurance, agility, and "heart,"

or "wind," are best and easiest gained by this method.

7 Never exercise just before or after a meal. At least one-half hour should be allowed before, and two hours and a half after, eating. Exercise draws blood away from the stomach, and blood is essential to digestion.

8 The best time to exercise is between ten and twelve o'clock in the forenoon and between four and six o'clock in the afternoon.

9 If exercising before breakfast makes you feel faint or weak, then the early morning is not the time for you to work. Sometimes a glass of milk, or a little toast will make early morning exercise possible without injurious effects.

10 If you exercise at night, let your exercise be at least one-half hour before bed time. It is best to go to bed with the blood in its normal circulation; sleep is easiest under such conditions.

11 Wherever it is possible, arrange your exercises according to systematic progression.

12 If you desire to increase your weight, eat starchy, fat, and oily foods, and make your exercise moderate and slow, with heavy weights, and avoid a free flow of perspiration. If you desire to decrease your weight, eat sparingly, drink sparingly, take light, active work, and perspire freely.

13 Some athletes and gymnasts torture and injure themselves by refusing to take water when the mouth becomes dry and the saliva thick and

white. At such times rinse the mouth out, take a swallow or two of cool water, and wait five minutes. An active body needs periodical supplies of water during the process of profuse perspiration. Water should not be taken in large quantities, nor is it necessary to drink every ten or fifteen minutes, but a mouthful to relieve a dry mouth and a parched throat is essential to good training. Do not drink large quantities of water just before exercising.

14 The largest muscle is not always the strongest. Work for quality and not for quantity.

15 Work in the open air as much as possible.

16 Sunshine is the greatest tonic nature provides; let every part of the body be bathed in it as often as possible.

17 Very few people are ambidextrous, but all exercise should be practiced by the left as well as the right side of the body. Make it a point to become just as proficient with the left hand as with the right. Many exercises go in pairs—right and left. Follow this principle and your development will be symmetrical and your strength equalized.

18 The question is often asked, "What is the best exercise?" There is no "best" single exercise. To exercise one muscle or one set of muscles continually would be injurious. The muscles so exercised would cease to develop, and the nerve force be exhausted, causing paralysis.

19 To reach physical perfection the whole body

must be exercised and developed. Every organ and muscle must perform its function according to its importance, strength, and size. The body may be likened to a chain—no stronger than its weakest link. Hence every organ and muscle should be proportionately cultivated.

20 At the beginning of exercise, time a few movements to your respirations and breathe deep and full.

21 Take your bath before the perspiration is re-absorbed by the body. Do not lounge around until the suit and the skin become dry again.

22 Regular habit plays a prominent part in training and exercise. Be regular at meals, regular in exercising, regular in going to bed and rising, regular in private habits, and regular in freeing the mind from worry. Take the inevitable as it comes, and always be cheerful. The buoyant nature gains strength and muscle the quickest, for worry saps the vital force and leads to nerve exhaustion.

23 In training or exercising observe closely what serves you best. Study the general rules and laws of health, and abide by those which are applicable to your individual case.

24 Slow exercise is best for nervous temperaments; rapid, for phlegmatic; light competitions, games, etc., for melancholic.

25 Drink water freely before going to bed and on rising; it supplies the tissues and bathes the stomach.

GENERAL COMMENTS

Beauty or comeliness of person is impossible without health. Physical exercise, with training, is the panacea for all petty indispositions of the body.

Muscular power and size are two qualifications greatly desired by every man. A fine physique, with symmetrical proportions, is an object of envy to the puny and weak.

Mark the difference between physical exercise and training. Exercise is possible without training; training is impossible without exercise.

A baby does not walk at birth; neither does the beginner in gymnastics and athletics reap all the good results of training in a week.

There is one just court of justice in the world, and Nature is the judge. Violate any one of her laws and you must suffer the penalty.

The body cannot be left to accident or caprice for training, development, or education.

As a general rule, exercise increases the weight of slender men and decreases the weight of heavy men.

If you run a hundred yards quickly and find yourself out of breath, your body has either been neglected or abused.

Medicine never improves the condition of a healthy body. The very minute you begin to "run

down," try physical exercise, which accelerates the blood and forces a greater supply of oxygen into your lungs. A free blood circulation and a new supply of oxygen are the best tonics and invigorators.

Beware of patent medicines, better named "quack swills." Some of these mixtures have an inviting appearance, a pleasant odor, a pleasing taste—and a poisonous effect.

Some people spend three-fourths of their lives in recklessly breaking down their bodies. The other fourth they spend in racing all over the world, hoping to find some merciful stream from Mother Earth which will give back to them that priceless jewel, health, so ruthlessly thrown away. Millions of dollars are spent annually in search of health, yet multitudes refuse to take advantage of a free system (physical exercise and training) for the preservation of the health.

Be temperate in all things. If you must use tobacco and alcoholic stimulants, indulge in them moderately.

The cadaverous face, sickly body, and delicate walk are no longer marks of intellectuality. There was a time when men held their bodies in contempt. "Mere bigness" was a term of reproach. Brutality was always ascribed to strength. It was thought that a weak body was easier to "keep under." To tell a woman she looked frail and delicate was a compliment. Weak bodies were regarded

as spiritual—strong bodies savored too much of materialism. But the old days have passed, and as science and progress have made their appearance, ignorance and superstition have disappeared.

Weakness and lassitude were the result of the old foolish ideas relative to the absence of bodily exertion. Many a son suffers today on account of the inactivity of his father. Every man who expects to be a father should have due regard for his physical condition. It is the crime of civilized nations to bring defenseless and helpless posterity into the world with defective and deformed bodies.

"Get health by exercise . . . then keep your health by using it. Tissue not used soon becomes a culture bed of disease. Health and strength are sacred trusts, and if you misuse them or fail to use them, Nemesis is on your trail."—The Philistine.

"Mens sana in corpore sano."

"Nervous energy is grand, and so is physical power; combine the two and you move the world." —Thomas Wentworth Higginson.

Study the needs of your own body and watch the results of your experiments. No two persons are constituted exactly alike; rules of health and hygiene are not applicable to every individual. What is good for some is bad for others. Milk is poison to certain constitutions, although milk is said to contain all foods.

Pay strict attention to that which is good for

you. Shun that which weakens your strength or worries your mind.

Always be cheerful and never worry—particularly so if you are training for any special event, and one should always be in training for life's events. Men wear out sooner by worry than by work. Work is healthful, worry is ruinous.

Some athletes dissipate their strength and disregard their bodies for nine months in the year. Suddenly they change their habits, begin a strict course of training, and try to remedy in three months the bad effects of nine.

No man in strict training should use tobacco.

Physical exercise affords a complete rest for the brain. With the body active, the blood in free circulation, and the breathing quick and deep, the mind is at rest. Thoughts of the outside world disappear. There is no strain whatever on the mind, for it is intent upon nothing but the exercise. Physical exercise drives away the "blues."

THE MENTAL ATTITUDE INFLUENCING HEALTH AND TRAINING

No one questions the power of the mind over matter. We all know that the mind rules the body to a certain extent. Nobody knows exactly what this wonderful mental force is, because science has not discovered, and cannot find, the dividing line between physical matter and psychological activity. The blending of mind and matter is an interesting question to special students; but physical trainers and health seekers are satisfied if they learn how to apply the mental power for personal profit.

It is an established fact beyond any question or doubt that if the mind is directed into certain channels the body is materially influenced. Foolish beliefs, superstitions, and fears operate against physical progress. These mental attitudes very often undermine health, and are, in some cases, the cause of insanity.

On the other hand, the cheerful mind, optimistic tendencies, and a well-balanced mental control, will add to the vigor and life of the body. A good, wholesome belief in what you undertake is to win half of the battle before you make the effort.

This rule applies to physical training, to those

seeking or trying to keep health, and to all forms of business, whether commercial or professional.

Many "cults" and "isms" have seized this simple law of nature and have befuddled the public mind by making false claims.

The supernatural and spiritualistic injection is spurious and superfluous. One can get all the benefits of nature without any aid from ghosts or spooks of any name or description. There is absolutely nothing in the claim of supernatural "faith cure."

A belief in nature, a belief in yourself, a belief in all that is really grand and sublime, and a determination to let the best side of your mental faculties rule your body, will enhance your general condition and lengthen your span of life.

If you start a course of training with the idea that you will not be successful, this mental attitude will operate as a handicap. You will not be interested; and finally your fading efforts will escort you back to your original indifference. You will fume a bit and fret over your failure; and then, to pacify your mind, you will unwisely conclude that your physical condition is good enough. But if you begin with determination and the right kind of natural belief in your ultimate success, in a little while you will experience a revelation that will influence the rest of your existence.

You can easily test the wonderful powers of the mind by applying the principles of belief and de-

termination to any physical condition. By observing the natural laws of life and by aiding nature with the mind, you can cure and prevent all petty indispositions forever. And if you prevent the petty indispositions, the larger ailments will be impossible.

By working on the credulity of another you can make that person act contrary to his own reason. A number of students, at odd intervals, told a fellow student that he looked sick. The victim was found later in bed with a doctor by his side. The "branding joke" practiced by certain secret lodges is known to almost everyone. Yet many men and women, while blindfolded, have been made to believe that a piece of ice placed on the bare skin was a red hot iron; and it is a matter of common record that these victims suffered the same pain as if real fire had been applied.

The mind really works wonders, but one must be careful and start only the right kind of mental vibrations. Beneficial impressions and beliefs based on natural laws and common sense can be made a great factor in building up the human body and increasing the health of the general public. So, if you are ill, live right and believe that you will get well and stay well, and you will; and if you train, put your confidence in your work and nothing can stop you—you will develop physical power and everlasting health.

Part II

Practical Exercises for Home Training, School, and Gymnasium Work,

THE DUPLEX SYSTEM

Heavy Weights and Slow Action 10 minutes } Alternated with { Light Weights and Quick Action 5 minutes

TIME

Morning 15 minutes — Night 15 minutes

PROGRESSION

From 5 lb. to 100 lb. Dumb-bells — From 24 to 150 counts

RESULT

Powerful Muscles Strength — Lightning Speed Agility

CLIMAX

Physical Perfection

Symmetry — Grace

PRACTICAL EXERCISES

If you are slender and would like to build up and increase your weight, or if you are weak and would like to get strong, your purpose may be accomplished by daily exercise and by adhering to the rules of training. Even if you are in good condition and possess normal strength, muscular activity should be a part of your regular life.

The exercises of the Duplex System of Training can be made a valuable asset to every individual. Very little time is required—ten to fifteen minutes, morning and night.

The Duplex method may be explained as follows: Working with weights (dumb-bells) ranging from 5 to 100 pounds, according to physical ability. From seven to ten minutes of this kind of exercise will be necessary. Then follow at once by quick free-hand action from three to five minutes. The heavy work will develop large and powerful muscles, while the light work will insure speed and agility.

Many theories about physical exercise have been offered to the public. It seems that the "experts" who advance the theories are in conflict with one another. All kinds of advice against heavy weights are in print and in circulation by word of mouth; and there are any number of "light-weight" formulas, differing materially, but each claiming superior wisdom. Advertising mediums are replete

with "systems" for getting strong; and doctors who are not medical practitioners, and who are neither gymnasts nor athletes, have written oceans of words from the "scientific standpoint" directing the human family how to reach physical perfection by the "higher educational" way. This labyrinth of advice is so intricate, complex, and "scientific" that university presidents and trustees attach more importance to the prolix anthropometrical, and other useless but expensive records, punctiliously filed in polished card cases, than to the real active muscular work a student should do. The student soon realizes the farce and laughs up his sleeve at the "science" of physical training.

The opponents of heavy weights are fearful that one may overstrain himself and wreck his constitution, and so a five, ten, or fifteen-pound dumbbell is a dangerous instrument. The high-sounding phrase, "Let the brain develop the muscle," is then used, and the whole question is settled to the satisfaction of the "expert." On the other hand, this same "expert," following the demand of students and society, loudly shouts his approval of football and the four-mile boat race, and gives his "scientific" sanction to the spirited athletic contests of track and field.

The human frame can be subjected to no greater strain than in these sports—every nerve, muscle, bone, and sinew, is taxed to the limit; yet little, if any, bad after results are noticed, notwithstanding

the fact that a man occasionally drops in a faint at the end of his race.

One may begin his exercise with a five or ten-pound weight, and as he improves he may increase the weight and also the amount of his work. There is not a possibility of danger in the Duplex System. It is not a menace, but it is the short cut path to health, strength, and perfect condition. Muscles require resistance for development. Weights are necessary to economize time. Free-hand action is good, but it should not be the base of the exercise, because it would be the long process; and, furthermore, not one in ten would force the muscular contraction necessary for growth.

Do not be misled by catch devices and exclusive claims. These are mystifying schemes to get your money. Shoulder-braces, electric belts, spiral springs, height increasing apparatus, and all other such paraphernalia are expensive and useless. You can get all the benefit offered by these appliances, and more, by natural, simple, and well directed exercise. A straight back is desirable, but a shoulder-brace will never give you an erect carriage. Even if it holds you up temporarily, the minute you take it off you drop to a stooping attitude worse than before. Strong muscles contract. Develop your shoulders and back and let the muscles perform their natural function of keeping you in an upright position.

The electric belt idea is ridiculous from start to

finish, while the height increasing apparatus is a stretching process that can be performed as effectively without the apparatus.

The new spiral spring device exercises only one set of muscles. The "deep-knee-dip" or the squatting exercise can be executed just as well without the spring attachment.

These few illustrations are used simply to show you the folly of following anybody's "fad." Fakes and fads are numerous, and they never measure up to the claims made for them. You realize this after you have been "taken in," and in your disgust, you are likely to discard all forms of profitable exercise.

No one yet has discovered a method for producing strength through thought, hypnotism, or faith. So far, no improvements have been made on nature's plan for physical growth and development. All so-called scientific discourses, arguments, and essays avail but little in the absence of muscular activity, a free circulation of the blood, and deep breathing. If you would get strong, exercise regularly and systematically—live sensibly and moderately—and shape your course by the recognized, tried, and common-sense rules of life and training.

You run no risk of straining yourself by using the weights. If the football team, the boat crew, the hundred-yard-dash man, and the one-mile runner can survive their strains, you are safe in in-

creasing the weights you use as you grow stronger. You can add one inch to your biceps and from two to three inches around your chest in ninety days, and your general all round improvement will keep pace with these marvelous figures by practicing daily the following plain, simple, and natural exercises:

POSITION
Fig. 1

BELLS TO SHOULDERS
Fig. 2

VERTICAL OVERHEAD
Fig. 3

FRONT HORIZONTAL
Fig. 4

FIRST DRILL

R.=Right
L.=Left

With two 5 lb. Dumb-bells
Setting-up Exercises

POSITION: Spread feet about twenty-five or thirty inches—bells on floor—bend forward, take one bell in each hand. (Fig. 1)

(Note: After each back bending exercise leave bells on floor.)

1 From position (Fig. 1) straighten up, bringing bells to shoulders (Fig. 2), push to vertical overhead (Fig. 3), back to shoulders and down to floor.

(Note: Do this and following exercises six times unless otherwise marked.)

2 Same exercise as No. 1, only push bells to front horizontal (Fig. 4)

3 Same, push bells to side horizontal (Fig. 5)

4 From position (Fig. 1), swing bells—straight arms—to vertical overhead (Fig. 3), (12 times)

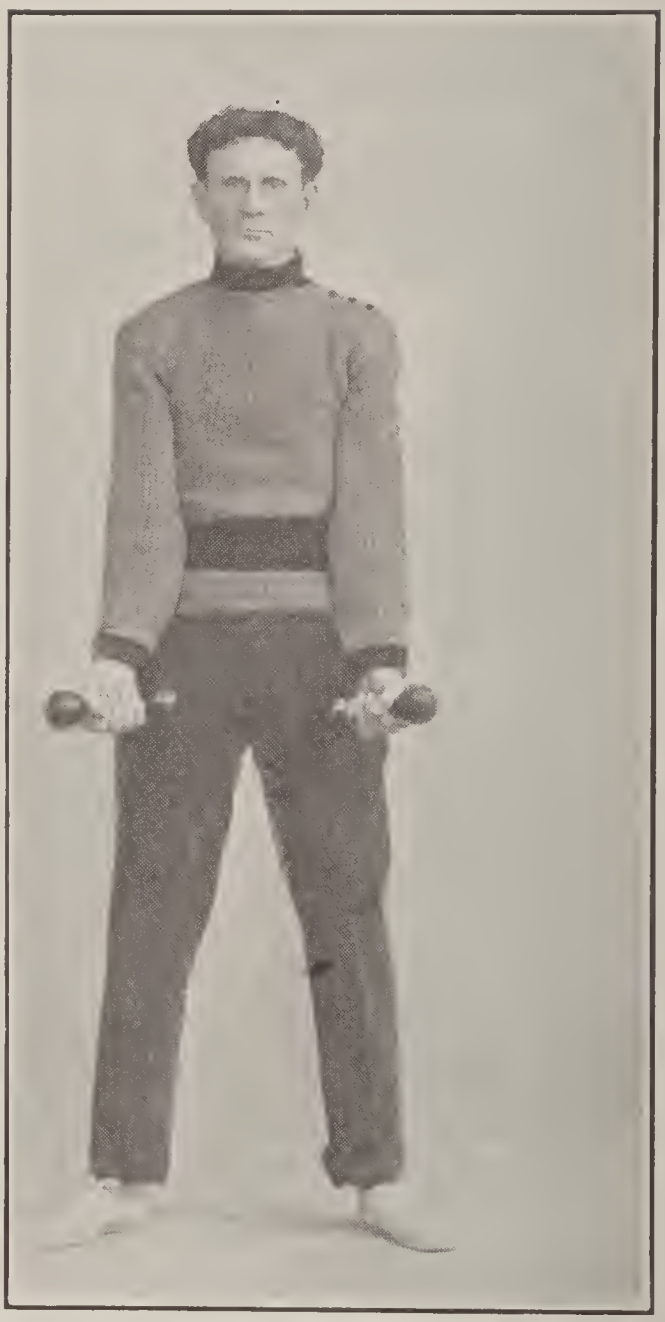
Second Group of Exercises

Pick up bells—stand erect—elbows straight and close to sides—palms front (Fig. 6)

5 Biceps exercise—bring bells hard to shoulders (Fig. 2), (25 times)

6 From position (Fig. 6), raise bells—straight arms—to vertical overhead (Fig. 3), (12 times)

SIDE HORIZONTAL
Fig. 5



POSITION
Fig. 6

SIDE PUSH (R. L.)
Fig. 7

BELLS OVER SHOULDER (R. L.)
Fig. 8

7 Position (Fig. 6), bring bells to shoulders (Fig. 2), and push to front horizontal (Fig. 4), back to shoulders (Fig. 2), and down to sides (Fig. 6)

8 Same exercise as No. 7, varied by pushing bells to vertical overhead (Fig. 3)

9 Same exercise as No. 7, varied by pushing bells to side horizontal (Fig. 5)

10 Repeat No. 6

Third Group of Exercises

Place bells on floor.

11 From position (Fig. 1), straighten up, bringing bells to shoulders (Fig. 2), push to R. side (Fig. 7), back to shoulders and down to floor. Alternate R. and L.

12 Position (Fig. 1), swing bells over R. shoulder (Fig. 8), and back to floor. Alternate R. and L. (12 times)

13 Position (Fig. 1), swing bells—straight arms—to side horizontal (Fig. 5), and back to floor (12 times)

Fourth Group of Exercises

Pick up bells—position (Fig. 6)

14 Repeat No. 5—Biceps Exercise (25 times)

15 Position, arms vertical overhead (Fig. 3), drop to front horizontal (Fig. 4), swing to side horizontal (Fig. 5), back to front horizontal (Fig. 4), and to vertical overhead (Fig. 3)

CROSSING ARMS
Fig. 9

BELLS BACK OF HEAD
Fig. 10

SIDE BEND (R. L.)
Fig. 11

BACKWARD SWING
Fig. 12

16 Position, arms side horizontal (Fig. 5), swing crossing arms in front (Fig. 9), and back to side horizontal (Fig. 5). Alternating R. over L. and L. over R. (12 times)

17 Position (Fig. 6), lift bells to side horizontal (Fig. 5), swing to front horizontal (Fig. 4), back to side horizontal (Fig. 5), and down to sides (Fig. 6)

18 Repeat No. 5—Biceps Exercise (50 times)

Fifth Group of Exercises

Place bells on floor

19 From position (Fig. 1), straighten up, bringing bells to back of head (Fig. 10), and down to floor (12 times)

20 Position (Fig. 1), swing bells to R. side (Fig. 7), without bending arms or moving feet—back to floor (12 times) Alternate R. and L.

21 Position (Fig. 1), lift bells to vertical overhead (Fig. 3), one move bending arms—back to floor (12 times)

22 Position (Fig. 1), swing bells—straight arms—to vertical overhead (Fig. 3), drop to position (Fig. 6), back to vertical overhead (Fig. 3), and down to floor.

Sixth Group of Exercises

Pick up bells—position (Fig. 6)

23 Position, arms vertical overhead (Fig. 3)

POSITION
Fig. 13

HALF SQUAT
Fig. 14

FULL SQUAT—DEEP KNEE DIP
Fig. 15

RAISE ON TOES
Fig. 16

drop to side horizontal (Fig. 5), swing to front horizontal (Fig. 4), back to side horizontal (Fig. 5), and to vertical overhead (Fig. 3)

24 Repeat No. 5—Biceps exercise (50 times)

25 Position (Fig. 2), bend to R. side extending L. hand up and R. hand down (Fig. 11), bells back to shoulders (Fig. 2), same bend to L.—alternating R. and L. (12 times)

26 Position, bells back of head (Fig. 10), lift to vertical overhead (Fig. 3), and back to position (Fig. 10) 12 times.

27 Position, bells to shoulders (Fig. 2), swing backward (Fig. 12), back to shoulders (Fig. 2) (12 times)

28 Position, arms vertical overhead (Fig. 3), swing backward (Fig. 12), back to vertical overhead (Fig. 3) (12 times)

29 Repeat No. 5—Biceps exercise (25 times)

30 Repeat No. 6

Seventh Group of Exercises

Thigh and Leg Work

(Also see page 102)

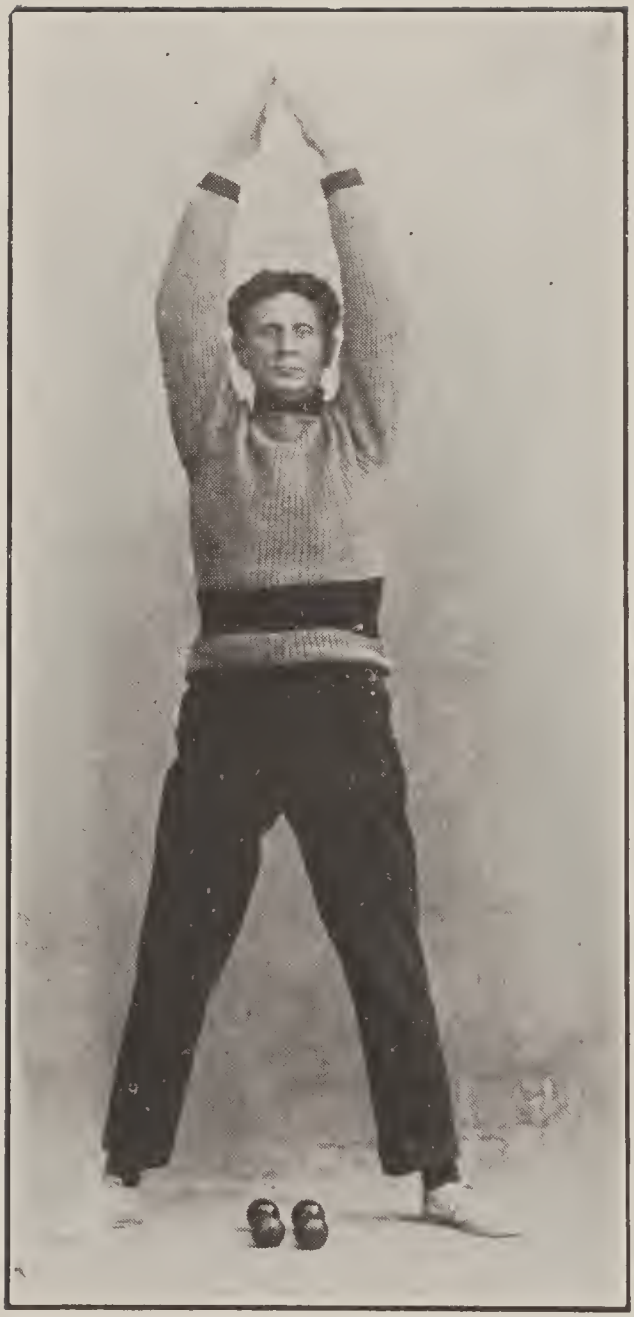
Position (Fig. 13)

31 Half squat—body perpendicular—(Fig. 14), back to position (12 times)

32 Full squat—body perpendicular—deep knee dip—(Fig. 15), back to position (12 times)

THRUST ARMS DOWNWARD
Fig. 17

THRUST ARMS OVERHEAD
Fig. 18



STRETCH AND REACH
Fig. 19

33 Half squat, alternated with full squat (12 times)

34 Raise on toes (Fig. 16). (25 times)

Eighth Group of Exercises

Free Hand

Place bells on floor

35 Repeat No. 6
36 " " 5
37 " " 7
38 " " 8
39 " " 9

Open and shut fingers on upward and downward thrusts.

40 Fists to chest—bend forward and thrust arms downward, open fingers (Fig. 17), fists back to chest thrust arms over head, open fingers (Fig. 18)

41 Arms over head—stretch and reach (Fig. 19)

(Note: For other free hand exercises, see page 100.)

(Note: The free hand exercises should be executed rapidly.)

(Note: By using your own ingenuity you can make up many more combinations of exercises from the above drill. Variety will add spice to your work.)

(Note: As you grow stronger, work your biceps exercises up to 250 or 300 times.)

POSITION
Fig. 20

BELL TO SHOULDER (R. L.)
Fig. 21

VERTICAL OVERHEAD
Fig. 22

POSITION
Fig. 23

SECOND DRILL

R.=Right
L.=Left

HEAVY WORK

With 10, 15, 20, or 25 lb. Dumb-bell

(Note: Start with weight best suited to your strength. As a rule, the 10 or 15 lb. weight is best to begin with.)

Position: Same as in First Drill, page 67.

Take bell in R. hand (Fig. 20)

(Note: After each back-bending exercise leave bell on floor.)

1 From position (Fig. 20), straighten up, lifting bell to R. shoulder (Fig. 21), push to vertical overhead (Fig. 22), back to shoulder, and down to floor.

(Note: Do this and following exercises six times unless otherwise marked.)

2 Same exercise with L. hand

3 Position (Fig. 20), swing bell—straight arm—to vertical overhead (Fig. 22), (12 times)

4 Same exercise with L. hand (12 times)

5 Position (Fig. 20), lift bell to vertical overhead (Fig. 22), do this exercise in one move, bending arm, bringing bell up close to body (12 times)

6 Same exercise with L. hand (12 times)

BELL TO SHOULDERS
Fig. 24

VERTICAL OVERHEAD
Fig. 25

FRONT HORIZONTAL
Fig. 26

POSITION
Fig. 27

Second Group of Exercises

Pick up bell—hold by knobs (Fig. 23)

7 Biceps exercise—bring bell hard to shoulders (Fig. 24), (25 times)

8 Position (Fig. 23), swing bell—straight arms—to vertical overhead (Fig. 25), (12 times)

9 Position (Fig. 23), bring bell to shoulders (Fig. 24), push to vertical overhead (Fig. 25), back to shoulders (Fig. 24), and down in front (Fig. 23)

10 Same exercise as No. 9, varied by pushing bell to front horizontal (Fig. 26)

11 Repeat No. 7—Biceps Exercise—(25 times)

12 Repeat No. 8

Third Group of Exercises

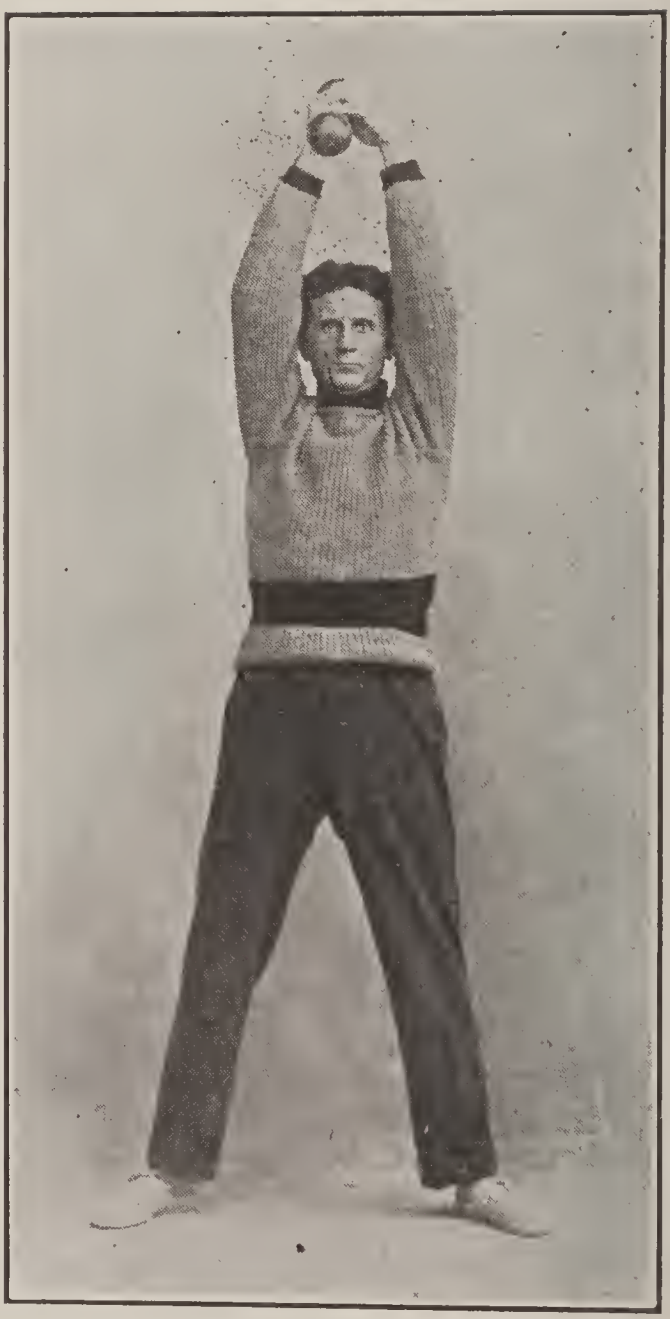
Place bell on floor—Position: Grasp handle with both hands (Fig. 27)

13 From position (Fig. 27), straighten up, lifting bell to chest (Fig. 28), push to vertical overhead (Fig. 29), back to chest (Fig. 28), and down to floor.

14 Position (Fig. 27), swing bell—straight arms—to vertical overhead (Fig. 29), and back to floor (12 times)

15 Position (Fig. 27), swing bell over R. shoulder (Fig. 30), and down to floor. Alternate with R. and L. (12 times)

BELL TO CHEST
Fig. 28



VERTICAL OVERHEAD
Fig. 29

BELL OVER SHOULDER (R. L.)
Fig. 30

SIDE PUSH (R. L.)
Fig. 31

16 Position (Fig. 27), bring bell to chest (Fig. 28), side push to R. (Fig. 31), back to chest (Fig. 28), and down to floor. Alternate R. and L.

Fourth Group of Exercises

Pick up bell—hold by knobs (Fig. 23)

17 Repeat No. 7—Biceps Exercise—(50 times)

18 Repeat No. 8

19 Position (Fig. 23), bring bell to shoulders (Fig. 24), side push to R. (Fig. 32), back to shoulders (Fig. 24), and down in front (Fig. 23). Alternate R. and L.

20 Position (Fig. 23), swing bell to back of neck (Fig. 33), and down to front (Fig. 23), (12 times)

21 Position (Fig. 32), swing bell from R. side to L. side, passing thighs (12 times)

22 Position (Fig. 33), lift bell to vertical overhead (Fig. 25), (12 times)

23 Repeat No. 7—Biceps Exercise (25 times)

24 Repeat No. 8

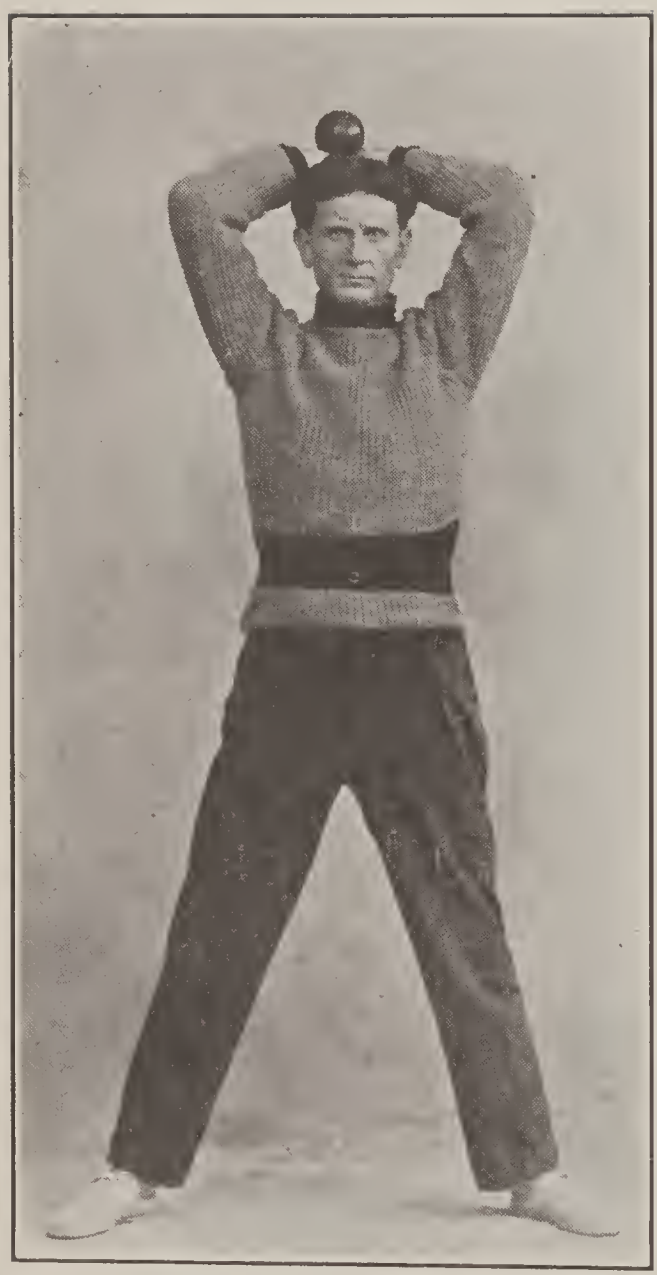
Fifth Group of Exercises

Place bell on floor. Position: Grasp handle with both hands (Fig. 27)

25 From position (Fig. 27), swing bell to back of neck (Fig. 34), and down to floor (12 times)

SIDE PUSH (R. L.)
Fig. 32

POSITION
Fig. 33



BELL BACK OF NECK
Fig. 34

FRONT HORIZONTAL
Fig. 35 ·

26 Position (Fig. 27), swing bell—straight arms—to R. side (Fig. 31), and down to floor. Alternate R. and L. (12 times)

27 Position (Fig. 27), bring bell to chest (Fig. 28), push to front horizontal (Fig. 35), back to chest (Fig. 28), and down to floor.

28 Place bell on R. side (Fig. 36), lift—straight arm—sideways to vertical overhead (Fig. 22), and down to floor (12 times)

29 Same exercise with L. hand (12 times)

Sixth Group of Exercises

Pick up bell—hold by knobs. (Fig. 23)

30 From position (Fig. 23), lift bell—straight arms—to R. side (Fig. 32). Alternate R. and L. (12 times)

31 Repeat No. 7—Biceps Exercise—(50 times)

32 Repeat No. 8

(Note: Thigh and leg work same as in First Drill.)

(Note: Free Hand exercises same as in First Drill.)

(Note: As you grow stronger increase the weight of your dumb-bell and the amount of your work.)

BELL AT SIDE (R. L.)
Fig. 36

DRILL

LIGHT DUMB-BELLS—QUICK ACTION

½ lb. to 1 lb.

1 Side push
2 Sternum exercise
3 Bend to R. and to L. (arms over head)
4 Bend forward—up—bells over R. shoulder —alternating over L. shoulder (exercise similar to chopping wood)
5 Curl bells under arms
6 Bend forward—straight arms—up and swing arms to R.—Alternate to L.
7 Bend sideways—up R. arm—down L.—alternate L. arm up—down R.
8 Bend forward—up—bringing bells to back of head—repeat—bringing straight arms to vertical
9 Forward push
10 Side chest exercise
11 Side horizontal push
12 Muscular chest exercise
13 Vertical push
14 Swimming exercise
15 Bend forward (front sweep)
16 Bend forward (side sweep)
17 Strike bells under chin
18 Strike bells over head and under chin
19 Strike bells behind back and under chin

20 Strike bells over head, under chin, and behind back, and again under chin
21 Strike bells behind heels, under chin, over head, and under chin
22 Hold bells under chin and jump feet apart
23 Same, striking bells over head and under chin
24 Reach and stretch

COMBINATION DRILL

With or Without Light Bells

Position—Counts, 1-2

Lifting arms to front horizontal charge:

1 R. foot forward
2 L. foot forward
3 Alternate 1 and 2
4 R. foot to R.
5 L. foot to L.
6 Alternate 4 and 5

Lifting arms to side horizontal, charge:

7 R. foot R. oblique
8 L. foot L. oblique
9 Alternate 7 and 8
10 R. foot L. oblique (cross legs)
11 L. foot R. oblique (cross legs)
12 Alternate 10 and 11 (cross legs)

Lifting arms to vertical over head, charge:

13 R. foot to rear
14 L. foot to rear
15 Alternate 13 and 14
16 R. foot R. oblique to rear
17 L. foot L. oblique to rear
18 Alternate 16 and 17

Bringing fists to chest, charge:

19 R. foot L. oblique to rear (cross legs)
20 L. foot R. oblique to rear (cross legs)
21 Alternate 19 and 20
22 Face about R. foot R. oblique to rear
23 Face about L. foot L. oblique to rear
24 Alternate 22 and 23

Lifting arms to front horizontal, charge:

Counts, 1-2-3-4
25 R. foot forward, L. face, throwing L. arm to side horizontal
26 Same, L. foot forward, R. face, etc.
27 Alternate 25 and 26
28 R. foot to R., L. face, throwing arm to side horizontal
29 Same, L. foot to L., R. face, etc.
30 Alternate 28 and 29

Lifting arms to side horizontal, charge:

31 R. foot R. oblique, bend forward, touch floor with both hands in front of R. foot

32 Same L. foot, etc.
33 Alternate 31 and 32
34 R. foot L. oblique (cross legs), bend forward, touch floor with both hands in front of R. foot
35 Same, L. foot, etc.
36 Alternate 34 and 35

Lifting arms to vertical over head, charge:

37 R. foot to rear, R. face, bring fists to chest
38 Same L. foot to rear, L. face, etc.
39 Alternate 37 and 38
40 R. foot R. oblique to rear, drop R. arm to hip level, L. arm up in straight line with R.
41 Same, L. foot L. oblique, etc.
42 Alternate 40 and 41

Bringing fists to chest, charge:

43 R. foot L. oblique to rear (cross legs), about face, thrust fists down
44 Same, L. foot R. oblique, etc.
45 Alternate 43 and 44
46 Face about R. foot R. oblique to rear, about face, strike bells behind
47 Same, L. foot, etc.
48 Alternate 46 and 47

(Note: From the combinations above, hundreds of others may be worked out.)

FREE HAND EXERCISES

Position: Stand erect, chest out, shoulders back, head back, chin in, arms down, hips back, knees straight, heels together, toes out.

(a) Exercises for shoulders, chest, upper back, and arms

1 Lift arms—front to vertical over head—elbows straight Counts 1-2

2 Same, alternate R. and L., 1-2

3 Same from sides, slap hands at vertical (1), slap thighs (2)

4 Arms to side horizontal, slap hands in front, 1-2

5 Same as No. 4. Cross arms, clinch fists, 1st R. arm over L., 2nd L. arm over R., alternate

6 Fists under chin, throw elbows to side horizontal, 1-2

7 Thrust arms to side horizontal, turn palms up, straight arm down to sides, 1-2-3-4

8 Shoulder circles (arms to side horizontal, front, vertical, down)

9 Arm quivers (down, front, side horizontal, vertical), 1-2

10 Shoulder circles out, 1-2

11 Same, alternate, 1-2

12 Shoulder circles in, 1-2

13 Same, alternate, 1-2

14 Side shoulder circles, 1-2

15 Same, alternate, 1-2

16 Lift sternum

17 Biceps movement—bring fists hard to shoulders. (Arms down, front, side horizontal, vertical) 1-2

18 Triceps movement (thrust fists down, side horizontal, front, vertical) 1-2

19 Rotate arms (down, side horizontal, front, vertical) 1-2

20 Forearm movement (curl wrists) 1-2

(b) Exercises for the Neck

1 Hands clasped back of head—pull forward and backward (the muscles of the arms should resist the muscles of the neck) 1-2

2 Turn head to R. (contract muscles) 1-2

3 Turn head to L. (contract muscles) 1-2

4 Drop head to R. side (contract muscles) 1-2

5 Drop head to L. side (contract muscles) 1-2

(c) Exercise for Waist, Small of Back, Loins and Abdomen

Hands on hips:

1 Bend forward, 1-2

2 Bend backward, 1-2

3 Bend to R., 1-2

4 Bend to L., 1-2

5 Alternate 3 and 4

Hands at chest:

6 Bend forward, thrust arms down, position, 1-2, bending backward, thrust arms up, 3-4

7 Bend to R., thrust arms side horizontal, 1-2

8 Bend to L., thrust arms side horizontal, 1-2

6 Alternate 4 and 5 (knee straight) 1-2-3-4

10 Bend forward, extend arms, touch floor, knees straight, 1-2

Arms side horizontal:

11 Twist body, bringing R. arm to front, L. to rear, 1-2

12 Twist body, bringing L. arm to front, R. to rear, 1-2

13 Alternate 11 and 12, 1-2-3-4

14 R. arm front, L. to rear, bend forward, touch floor with R. hand, L. arm vertical, 1-2

15 Same, with L. arm front, 1-2

16 Alternate 14 and 15, 1-2-3-4

17 Bend forward, drop arms (straight) toward floor, back to position, 1-2

Arms vertical:

18 Bend forward, position, 1-2 (Reach)

Hands on hips:

1 Lift R. leg to R. (knee straight) 1-2

2 Lift L. leg to L. (knee straight) 1-2

3 Alternate 1 and 2 (knee straight) 1-2-3-4

4 Lift R. leg front (knee straight) 1-2

5 Lift L. leg front (knee straight) 1-2

9 Alternate 6 and 7, 1-2-3-4

7 Lift R. knee front, alternate L. (knee bent)

(d) Exercises for the Thighs

1-2-3-4

8 Same, double time (stationary run) 1-2

9 Lift R. foot rear, thighs perpendicular, alternate L., 1-2-3-4

10 Same, double time (stationary run) 1-2

11 Point R. leg to rear (knee straight) 1-2

12 Point L. leg to rear (knee straight) 1-2

13 Alternate 11 and 12 (knee straight) 1-2-3-4

14 Half squat (back straight) 1-2

15 Full squat (back straight) 1-2

16 Alternate 14 and 15 (back straight) 1-2-3-4

17 Half squat, pointing R. foot front, 1-2

18 Half squat, pointing L. foot front, 1-2

19 Half squat, pointing R. foot R., 1-2

20 Half squat, pointing L. foot L., 1-2

21 Alternate 17 and 18, 1-2-3-4

22 Alternate 19 and 20, 1-2-3-4

23 Full squat, pointing R. foot front, 1-2

24 Full squat, pointing L. foot front, 1-2

25 Full squat, pointing R. foot to R., 1-2

26 Full squat, pointing L. foot to L., 1-2

27 Alternate 23 and 24, 1-2-3-4

28 Alternate 25 and 26, 1-2-3-4

29 Rotate thighs (throw toes apart, pivot at heels) 1-2

(e) Exercises for the Legs

Hands on hips:

1 Raise on toes, 1-2

2 Raise on heels, 1-2

3 Alternate 1 and 2, 1-2-3-4

4 Rock on ankles, 1-2
5 Side stride jump (on tiptoes) 1-2
6 Front stride jump (on tiptoes) 1-2
7 Stiff knee jump (on tiptoes) 1-2
8 Bent knee jump (on tiptoes) 1-2
9 Pivot on toes, throw heels out, 1-2
10 Arms vertical, stretch and reach

(Note: The amount of exercise taken in a free hand drill depends on muscular contraction, controlled by the will power. Speedy development follows an exercise where the mind dictates muscular tension.)

"PUTTING UP" THE 100-LB. WEIGHT

"PUTTING UP" THE 100 LB. WEIGHT

Unused muscles the cause of physical weakness

Superior agility and muscular power are not possessions of the average man of normal health. A very large majority of men are satisfied with their flabby flesh. They boast of a condition good enough for ordinary business purposes, and rarely entertain a thought of the advantages of cultivated speed and strength.

Physical power may be acquired by any man who will devote a very small part of his life to systematic exercise. Putting a reasonable strain on the muscles, daily, will transform them into a mass of solid tissues and tough fibres. This is the kind of "make-up" that handles a heavy weight with comparative ease.

The dormant, unused muscle is smooth, soft, and weak, and gives out quickly if brought into action by fun or necessity. It is not accustomed to any strain, and, therefore, it has very little power of resistance. On the other hand, muscles kept in condition by work are ready for any contingency and will stand the limit of human pressure and endurance.

Lifting the 100-lb. dumb-bell with one hand to the shoulder, and then "jumping" or "pressing" it up overhead, seems like a herculean task to the

average man. This present day extraordinary feat should be a common-place performance; and any man of normal condition who will exercise properly for five or six months should be able to master the 100-lb. weight.

It is not necessary to be a natural giant; I know a number of men of surprisingly small stature who handle the weights up to a hundred pounds without any difficulty.

The process is quite simple: Practice with two 5-lb bells three days in the week. On the alternate days, exercise with the single 10 or 15-lb. bell. Rest on Sunday. At odd times, not too far apart, "put up" the 25-lb. weight, and gradually work up to the 50, 75, and finally the 100-lb. bell. Dumb-bells can be bought for four cents a pound. You do not have to invest in all at once. After a while you will conclude that the bells are more valuable to you than their weight in gold—for money cannot buy strength and health.

POSITION
Fig. 37

SIDE HORIZONTAL
Fig. 38

BREATHING EXERCISES

(Also see page 44)

In going to and from your place of business practice deep breathing. The best result from deep breathing is gained in the open air. After awhile when the habit is formed, you will breathe properly without thinking about it, as it will become second nature. But in the beginning you will have to force yourself, through the will-power, to fill the remote air cells.

The following exercises are simply suggestions of many more which may be devised:

Outdoor Practice

1 Inhale slowly; exhale slowly
Inhale quickly; exhale quickly
Inhale slowly; exhale quickly
Inhale quickly; exhale slowly
Inhale slowly, hold, count 4, 8, 12, 16

Indoor Practice—Position (Fig. 37)

2 Inhale, raise arms side horizontal (Fig. 38) exhale, lower arms.
Same, raise arms front horizontal (Fig. 39)
Same, raise arms high vertical (Fig. 40)

3 Inhale, hold breath, raise and lower arms side horizontal, 3, 6, 9 times
Same, front horizontal
Same, high vertical

4 Arms front horizontal (Fig. 39) inhale, lower arms to position (Fig. 37). In this

FRONT HORIZONTAL
Fig. 39

VERTICAL OVERHEAD
Fig. 40

exercise throw chest well to front and shoulders back. Splendid practice for correcting round shoulders.

5 Arms to front horizontal, inhale, swing arms to side horizontal (swimming move).

Repeat these exercises not less than 8 or 10 times.

(Note: The arm movements executed with the breathing exercises should be done slowly and in time with the breathing.)

REDUCING WEIGHT

OR

HOW TO REMOVE SUPERFLUOUS FAT

There is only one way to get rid of burdensome, ungainly, and unsightly fat. Turkish baths, or the sweating process alone, will not accomplish this object. Anti-fat drugs, if successful, ruin the health, and, to say the least, all such experiments are dangerous. You jeopardize your life if you try to get "thin" by using acids and purgatives. Beware of anti-fat advertisements.

The natural, safe way to reduce fat and return to normal condition is through constant, regular exercise and restricted diet. You do not have to starve yourself nor to suffer the hardships of useless self-denial. But you must work your muscles and work them vigorously, and you must stop overeating and excessive drinking! If you allow the stuffing impulse to rule you three times, or more, a day, your case is hopeless. You must control your appetite instead of being a slave to it. If you have the necessary determination, you will succeed; but do not expect miracles—you must persevere a reasonable time before you get satisfactory results.

Your fat, probably, is an accumulation of many years; therefore, you should not complain if several months are required to offset your fat-producing habits of long standing.

This much for your encouragement: what others

have done you can do, if you will. You do not have to experiment—no theories are offered here; but facts, proved by many cases, are your precedents. Once you get started, set your face in the right direction and remember the parable of the "pillar of salt." The new mode of life may seem a little strange at first, but after awhile it will be quite natural. You will not have to undergo any ridiculous sacrifices or suffer mental or physical tortures. But, on the other hand, your daily improvement will be a source of gratification; and as you again approach a normal condition of body, you will experience a happiness far superior to the passive contentment of the inactive man with his ever-present burden of fat.

Two meals a day are sufficient. Eat no breakfast. Take a light lunch about noon, or between eleven and twelve o'clock, and dine moderately in the evening. Suppers or after-theatre parties are fatal. Eat nothing between dinner and bed time. Of course, you must eat enough for normal strength but **no more.**

Avoid starchy, fat, and oily foods. Cut your potato diet in half, and leave pastry and freshly baked bread off your menu. You may eat toast, corn-bread, and crackers, but not abundantly. The average garden vegetables are wholesome and suitable for your case, but beware of excess. Beef, mutton, and poultry are the best meats, but trim off the fat.

Go lightly on eggs, butter, and milk, and save your money on desserts and sweets. In ninety-nine cases out of a hundred there is no room left for desserts in the average stomach.

The ordinary market fruits are good, but have a safe limit this side of too much.

Drink as little as you can at meal time and between meals. It is not meant that you suffer from thirst; but remember that the body is about eighty per cent. water. Malt and spirituous liquors, if taken at all, should be taken in very limited quantities.

A safe plan to follow is to eat and drink just enough for comfort and natural strength—an ounce more and the difficulty of your fat reducing problem is increased many times. You may deceive others, but you cannot fool yourself. If you go beyond the limit and continue to practice the art of Epicurus in gormandizing, do not blame nature and decry physical exercise if you remain fat—and add to it.

The diet question is comparatively simple. The method is wise, reasonable, and practicable. This, in connection with the muscular work necessary, will remove superfluous fat in the only natural way.

Fat-Reducing Physical Exercise

Nature demands of you a certain amount of physical activity. Your idea of bodily exertion is erroneous. A short walk in a park, or a "jog" for a few blocks down an avenue, is not enough. You must exert yourself until you force a mild perspiration. Later, a good, free sweat will be the evidence that you are working properly. It is immaterial whether we like or dislike this prescription of nature. It is required of us, and he who fails to obey the law must pay the penalty. Your fat is the proof of a part of the penalty you are paying. Get in line with nature—force yourself to do that which is good for you and reap the rewards.

Exercise from ten to twenty minutes in the morning, and do as much at night, one half hour before going to bed, and your reduction of weight will be only a question of time.

POSITION
Fig. 41

LIFT LEG (R. L.)
Fig. 42

LIFT BOTH LEGS
Fig. 43

BODY TO SITTING POSITION
Fig. 44

Special Abdominal Exercises for Reducing Large Stomachs

Fat people should exercise all the muscles of the body, and particularly those in the region of the middle trunk. General exercises for the neck, arms, chest, shoulders, thighs, and legs, have already been explained.

The following are special abdominal exercises, and the most important work for you to do.

1 Lie down on your back, palms to floor, arms straight (Fig. 41), and lift your R. leg at right angles to body ten times with straight knee (Fig. 42)

2 Same exercise with L. leg

3 Lift R. and L. legs alternately

4 Lift both legs together (Fig. 43), **knees straight**

5 With feet in straps, or under the bed, or some other piece of heavy furniture, to hold them down, raise body to sitting position—**knees straight** (Fig. 44)

6 Same exercise with arms folded across chest

7 Same, hands back of head

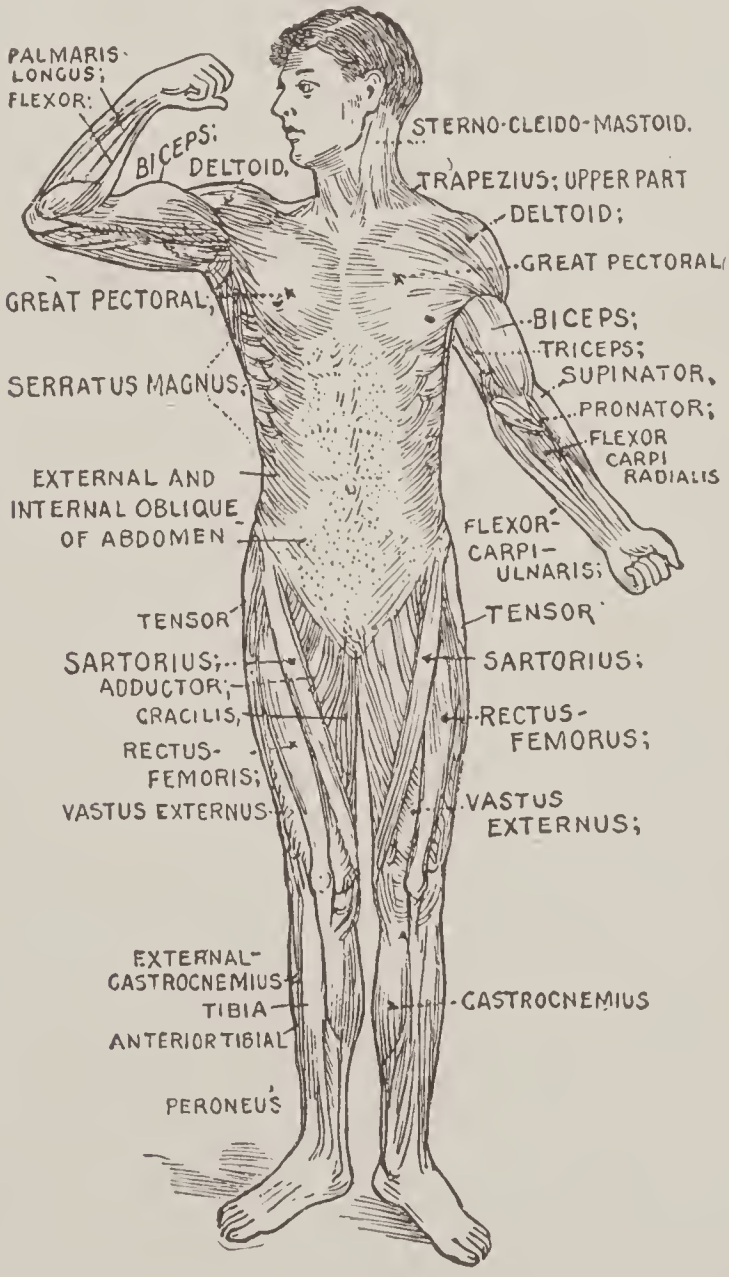
8 Same, straight arms over head

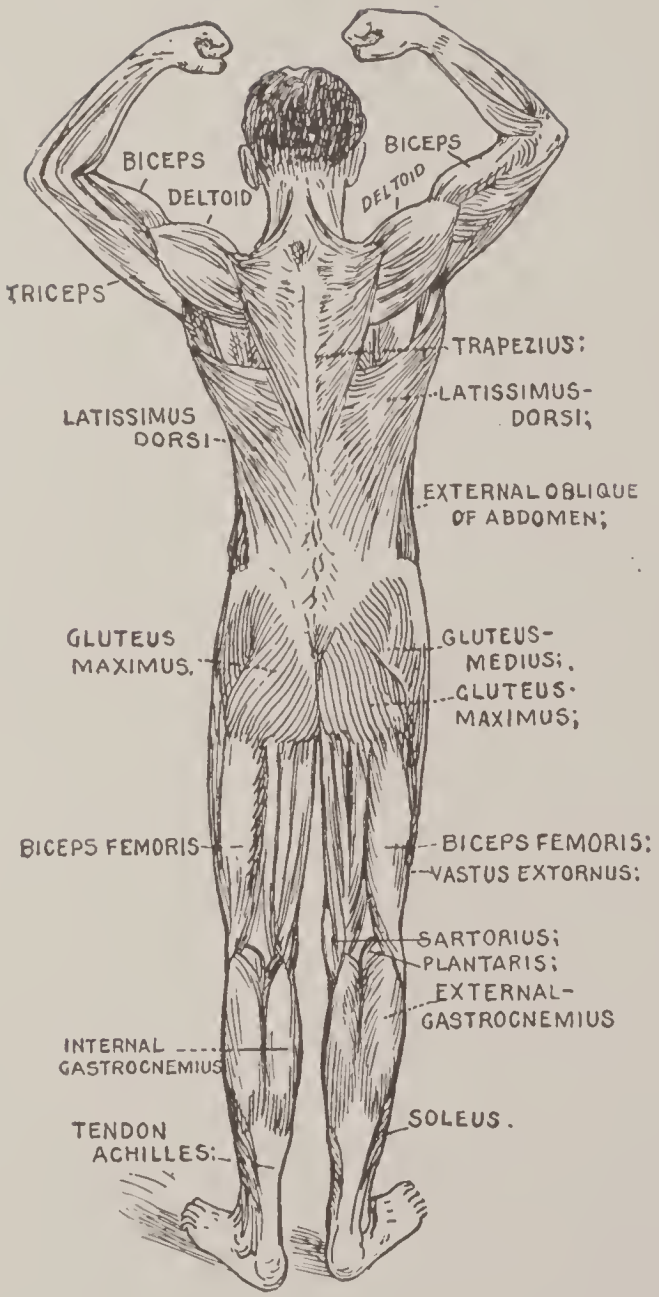
(Note: Increase daily the number of times you do each exercise. Muscular soreness should cause no alarm. It is a good sign. Go right on

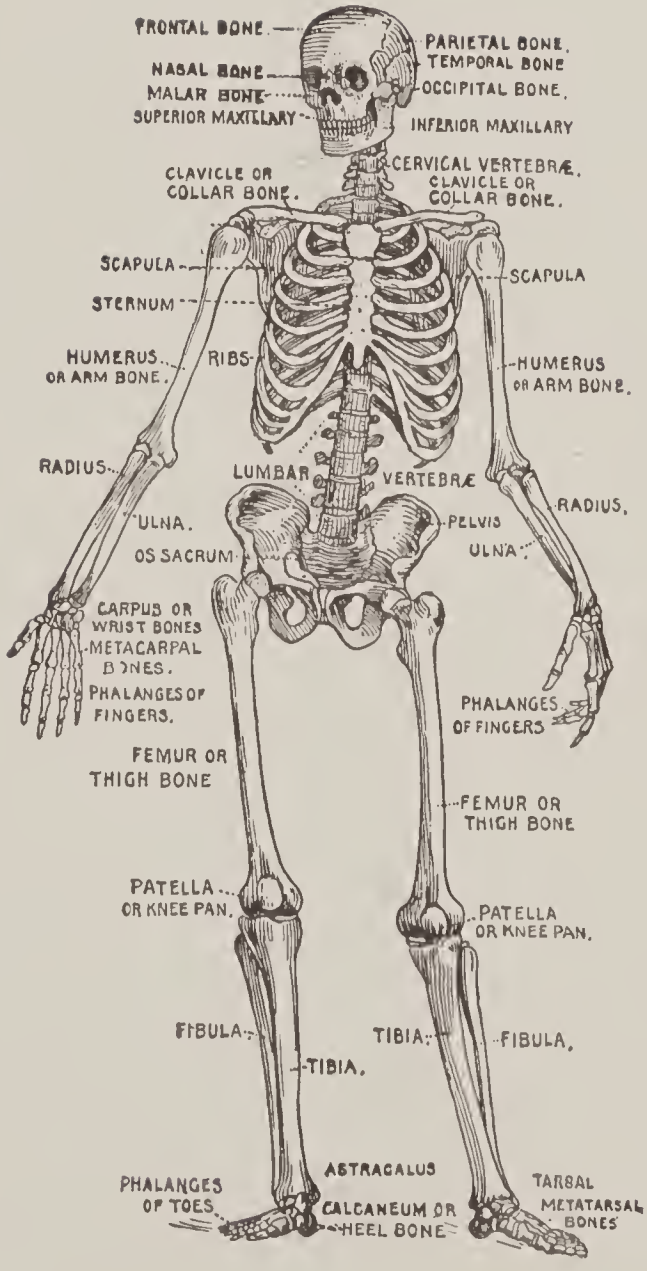
with your work and the soreness will disappear in a day or so. Ten to fifteen minutes—morning and night—will reduce your waist measure many inches in thirty days.)

BRIEF STUDIES IN ANATOMY

By studying the three following interesting and instructive plates, you may learn the names of the important muscles and bones of the body. These plates are presented here through the courtesy of the Narragansett Machine Co., of Providence, R. I.




BICEPS
DELTOID
BICEPS
DELTOID
TRICEPS
TRAPEZIUS;
LATISSIMUS DORSI
LATISSIMUS-DORSI;
EXTERNAL OBLIQUE OF ABDOMEN;
GLUTEUS MAXIMUS.
GLUTEUS-MEDIUS;
GLUTEUS-MAXIMUS;
BICEPS FEMORIS
BICEPS FEMORIS;
VASTUS EXTORNUS;
SARTORIUS;
PLANTARIS;
EXTERNAL-GASTROCNEMIUS
INTERNAL GASTROCNEMIUS
SOLEUS.
TENDON ACHILLES;


FRONTAL BONE.
NASAL BONE.
MALAR BONE.
SUPERIOR MAXILLARY.
PARIETAL BONE.
TEMPORAL BONE.
OCCIPITAL BONE.
INFERIOR MAXILLARY
CERVICAL VERTEBRÆ.
CLAVICLE OR COLLAR BONE.
CLAVICLE OR COLLAR BONE.
SCAPULA.
STERNUM.
SCAPULA
HUMERUS OR ARM BONE.
RIBS.
HUMERUS OR ARM BONE.
RADIUS.
LUMBAR VERTEBRÆ
RADIUS.
ULNA.
PELVIS
OS SACRUM.
ULNA.
CARPUS OR WRIST BONES.
METACARPAL BONES.
PHALANGES OF FINGERS.
PHALANGES OF FINGERS.
FEMUR OR THIGH BONE
FEMUR OR THIGH BONE
PATELLA OR KNEE PAN.
PATELLA OR KNEE PAN.
FIBULA.
TIBIA.
TIBIA.
FIBULA.
ASTRAGALUS
PHALANGES OF TOES.
CALCANEUM OR HEEL BONE.
TARSAL METATARSAL BONES

PHYSICAL MEASUREMENTS

Anthropometrical charts, usually, are drawn from the measurements of business men and students who are not properly developed. A very small percentage of business men are interested in regular exercise, and only about ten per cent. of students in the various colleges and universities take the physical training course seriously. The result is that the ordinary anthropometrical chart shows the average measurements of men as they are, and not as they should be. The chest measure of the average man is from two to four inches below that of the trained athlete with ideal proportions. In many instances, athletes do not measure up to the proper standards. This is due to a one-sided method of work, which, of course, produces an uneven development, and proportionately, the athlete falls short of his possibilities.

The great contrasts between properly trained and untrained men are seen in the upper part of the body—the region of the vital organs. But from the hips down there is no especially marked difference. Since men have to use their legs in walking, running, or jumping, this natural daily exercise keeps the leg muscles firm and in condition; and every man boasts, with pride, of the solid development of his lower extremities. This fact alone is the best argument favoring the regular exercise of all the muscles. But since nature does not compel

man to work the upper part of his body, the chest, shoulders, and middle trunk must be developed by individual effort. It is a great mistake to neglect the coverings of the vital organs, for they improve with the advancement of the general superstructure.

Another noticeable difference in size is in the arms. The gymnast, the weight-lifter, and others who constantly use their arms, are from one to three inches larger around the biceps.

Women suffer from the same defects. The contours of women would be more pleasing and more symmetrical if the measurements of the arms, chest and shoulders were greater in girth. A good complexion depends upon an ample lung capacity. Twenty or thirty extra cubic inches of breathing space will establish and maintain a perfect coloring of the skin.

The figures in the charts may not be ideal, but they are superior to the measurements of the average man or woman. Your general condition—health, strength, agility, and complexion—will be improved by striving to get nearer to the marks indicating perfection in physical development.

Compare Your Proportions With The Following:—

Height.	4-10	4-11	5	5-1	5-2	5-3	5-4	5-5	5-6	5-7	5-8	5-9
Weight	94	100	106	112	120	126	132	137	143	150	157	164
Chest	27.5	28.5	29.5	30	30.8	31.5	32.2	33	33.5	34	35.8	36.7
Chest exp. . .	29.5	30.5	31.5	32	32.8	33.5	34.2	35	35.5	36.3	37.8	38.7
Waist	22.2	23	23.5	24	24.6	25.2	26	26.8	27.5	28.5	29.5	30.5
Hips	37.5	38	38.8	39.5	40.5	41.5	42.5	43	43.5	44	44.5	46
Biceps	9.2	9.7	10	10.2	10.5	10.8	11	11.2	11.6	12.3	13	13.3
Forearm . . .	8.2	8.4	8.7	9.1	9.5	9.8	10	10.2	10.4	10.6	10.8	11.1
Thigh	19.5	20	20.5	21	21.5	22.2	22.5	23	23.7	24.5	25.5	26
Calf	11.5	12	12.4	12.7	13	13.3	13.6	13.9	14.2	14.6	15	15.3
Lung capacity cubic inches	110	130	142	155	165	175	185	195	205	215	225	240

Anthropometric chart for women (undressed) in pounds, inches and tenths. Clothing weighs from six to ten pounds.

Compare Your Proportions With The Following:—

Height.	5-3	5-4	5-5	5-6	5-7	5-8	5-9	5-10	5-11	6	6-1	6-2
Weight . . .	108	118	125	132	139	146	153	160	167	176	184	193
Chest	32	34	34.5	35	36	37	38	39	39.5	41	42	43
Chest exp. . .	35	37	37.5	38	39	40	41	42	42.5	44	45	46
Waist	26	26.5	27.5	28.5	30	31	32	32.5	33	33.5	34	34.5
Hips	31.5	33	33.5	34	35	36	37	37.5	38.5	39.5	40.5	41.5
Biceps	10.5	11	11.5	12	12.3	12.7	13.2	13.5	14	14.5	15	15.5
Forearm . . .	9.3	9.8	10.1	10.6	10.8	11	11.5	11.8	12	12.5	13	13.5
Thigh	17	18	18.6	19	19.6	20.2	20.8	21.4	22	22.8	23.5	24
Calf	12	12.4	12.7	13	13.4	13.8	14	14.4	14.8	15.3	16	16.3
Lung capacity cubic inches	200	215	230	245	260	280	300	320	335	350	370	390

Anthropometric chart for men (undressed) in pounds, inches and tenths. Clothing weighs from seven to ten pounds.

MEASUREMENT BLANKS

The following blanks are provided for your convenience. Before you begin a regular course in exercise measure yourself and jot down the figures in the blank space.

You will find interest in comparing your proportions to the measurements of trained and developed men and women. Your records should be taken without shoes or clothing. Shoes add nearly an inch to height, and clothes weigh from six to ten pounds.

These abridged measurement blanks are especially designed to economize time. Only the important parts of the body are to be considered, since the non-essentials do not particularly interest the average person.

The following simple rules will aid you to measuse yourself correctly:

CHEST (natural)—Pass the tape under the arms—close to the armpits—and over the nipples on men, and above the breasts on women.

CHEST (expanded)—Measure in the same way after taking a deep, full breath.

WAIST—The smallest part.

HIPS—The largest part.

BICEPS (upper arm)—Bring the first hard to shoulder—firmly contracting the muscles—and measure the largest part.

Forearm—Clinch the fist—and measure largest part.

Thigh—Calf—The largest parts.

After working three months, make a second record of yourself and you will be surprised at the improvement.

To increase the interest in your physical advancement, measure yourself every three months thereafter until the eight blanks are filled, and you will have a concise history of your development. At the end of the two years planned for your work, you will be such a different man or woman that no argument will be necessary to stimulate you to remain in fine condition.

	First	Second	Third	Fourth
Date				
Age				
Weight				
Height				
Chest				
Chest Exp.				
Waist				
Hips				

	R	L	R	L	R	L	R	L
Biceps								
Forearm								
Thigh								
Calf								
Lung Cap. (cubic in.)								

Measurement blanks

	Fifth	i th	Seventh	Eighth
Date				
Age				
Weight				
Height				
Chest				
Chest Exp.				
Waist				
Hips				

	R	L	R	L	R	L	R	L
Biceps								
Forearm								
Thigh								
Calf								
Lung Cap. (cubic in.)								

Measurement blanks

Part III

Graded Course in Apparatus Work for Gymnasium Practice

GRADED COURSE IN APPARATUS WORK FOR GYMNASIUM WORKERS

ABBREVIATIONS

V.=Vault
R.=Right
L.=Left

(Note: A vault implies the use of the hand or hands in jumping on or over a piece of apparatus.

A jump should be executed without touching the apparatus with the hands.)

(Note: These drills may be re-arranged to suit any instructor.)

VAULTING BAR

No. 1

1 Run under bar
2 Run under bar and back
3 Front circle and snap up
4 Snap under
5 Snap under and back
6 V. one foot on bar to R. and off
7 Same to L.
8 Run under, turn. V. to arms rest and push off backwards
9 Run under, hold, chest out, head back
10 Same as No. 8—push off for distance, for height
11 R. leg on bar, jump over without touching hands

12 Same L.
13 V. both feet on bar, R. hand grasping upright, L. hand on bar
14 Same L.
15 Continuous run, under and back, in circle

Vaulting Bar
No. 2

1 V. to R.
2 V. to L.
3 V. R. leg between hands, swing L. over and off
4 Same L.
5 V. ½ turn, catch bar with R. hand
6 Same L.
7 V. feet on bar, between hands, jump off
8 V. to R., L. leg between hands, R. extended
9 Same to L.
10 R. hand run under
11 L. hand run under
12 Straddle V., feet on bar, jump off
13 Same, touch heels
14 Same, touch toes
15 Same, arms over head

Vaulting Bar
No. 3

1 V. and repeat to R.
2 Same L.
3 V. and repeat to R. and run under

4 Same L.
5 V. and repeat to R. and snap under
6 Same L.
7 V. to R. and back to L.
8 Same L.
9 Same to R. and run under
10 Same L.
11 Same to R. and snap under
12 Same L.
13 Vault between hands—hold
14 Straddle vault
15 Run under—sit on bar—slip back to knees—fall back

Vaulting Bar

No. 4

1 V. to R.—L. hand under
2 V. to L.—R. hand under
3 Cut off R. hand with R. leg—swing L. over
4 Same L.
5 Circle bar
6 Circle bar and run under
7 Circle bar and snap under
8 V. R. leg through hands—front knee whirl—swing L. over
9 Same L.
10 Straddle V.—twist to R.
11 Straddle V.—twist to L.
12 V. legs over to R. hook knees—fall back

13 Same L.
14 Distance V. to R.—L. hand under
15 Same L.

Vaulting Bar
No. 5

1 Horizontal V. to R.
2 Same L.
3 Straddle V.—½ turn—V. on bar—jump off ½ turn
4 High V. jump (double up, balance and off) to R.
5 Same L.
6 Circle bar from knees
7 Same—snap under
8 V. legs to straddle—slip back to knees—back circle and cut off
9 Snap under—½ turn to R.
10 Same L.
11 V. R. leg through hands—back knee whirl—swing L. leg over
12 Same L.
13 Pivot V. to R.—throw one leg over—turn—and run or snap under bar
14 Same L.
15 Handspring

Vaulting Bar
No. 6

1 V. between hands—front double knee circle

2 Same—back double knee circle
3 Snap under, light on all fours
4 V. between hands—swing back, shoot through over bar
5 Front hand and toe revolve
6 Snap under, ½ turn to R., light on all fours
7 Same L.
8 V. between hands—change grip—hand and small of back whirl
9 Front circle—come to original position
10 Front knee whirl—on first circle bring other leg over and double knee whirl
11 Heel revolve and cut off
12 V. between hands for distance—and front roll over
13 V. to R. and back V. back
14 Same L.
15 Back to bar vault to knees—front circle and heel cut off

Vaulting Bar

No. 7

1 Pivot V. to R.
2 Same L.
3 Handstand V. to R.
4 Same to L.
5 Handstand and cut off between hands
6 Handstand and spring off
7 Feet and hand revolve and cut off

8 Feet and hand revolve
9 Hand and toe revolve
10 Back kip
11 Vault, cut off both hands with both legs to R.
12 Same L.
13 Knee, hand and toe revolve
14 Handstand and straddle cut off

Vaulting Bar

No. 8

1 Back V. to R.
2 Same L.
3 Snap under and ½ turn—and back—and handspring
4 Hand and toe revolve and handspring
5 Back kip—shoot through—cut off
6 Handspring and twist to R.
7 Same L.
8 Straddle V. and twist—knee circle and run under—turn and handstand and cut off between hands
9 Snap under and forward somersault
10 Hand and toe revolve and then feet and hand revolve and cut off
11 V. to R. and heel cut off
12 Same L.
13 Shoot through and clear bar
14 Same—twist to R.—L.

Vaulting Bar
No. 9
One-Hand Exercises

1 R. hand grasp bar—run under
2 Same L.
3 Run under and back—R. hand
4 Same L.
5 R. hand V. L. foot on bar
6 Same L.
7 Snap under—R. hand
8 Same L.
9 R. hand V.
10 L. hand V.
11 R. hand V. stiff knees—touch toes
12 Same L.
13 R. hand V. catch bar with L. hand
14 Same L.
15 R. hand V. to sitting position
16 Same L.

Vaulting Bar
No. 10
One-Hand Exercises

1 R. hand V. and repeat
2 Same L.
3 R. hand V., catch bar with L. hand and vault back
4 Same L.
5 R. hand V. and repeat and run under
6 Same L.

7 R. hand V. and repeat and snap under
8 Same L.
9 R. hand run under—hold curve body
10 Same L.
11 R. hand snap under and ½ turn
12 Same L.
13 R. hand V. and repeat, and snap under and ½ turn
14 Same L.
15 V. to R. both hands reverse grip
16 Front circle—hands to floor and roll over

BUCK

No. 1

1 Straddle V.
2 V. to R.
3 V. to L.
4 V. R. foot on buck and jump
5 Same L.
6 Same R. and ½ turn
7 Same L. and ½ turn
8 R. hand straddle V.
9 L. hand straddle V.
10 Same as No. 8—L. hand behind back
11 Same as No. 8—R. hand behind back
12 Same as No. 8—L. hand back of head
13 Same as No. 8—R. hand back of head
14 Same as No. 8—L. hand high
15 Same as No. 8—R. hand high

16 V. both feet on buck and jump
17 Same—touch toes (knees straight)
18 Same—touch heels
19 Same—arms high over head

Buck
No. 2

1 Straddle V. and roll over
2 Straddle jump over—throwing R. leg first
3 Straddle jump over—throwing L. leg first
4 Straddle jump from both feet
5 Run—jump on buck and off
6 Hurdle over—R. foot on buck
7 Same L.
8 Flat foot jump on buck
9 Same—and full turn to R.
10 Same—and full turn to L.
11 Run, jump on buck and jump for distance
12 V. to knees and off
13 Straddle V. and twist to R.
14 Straddle V. and twist to L.
15 V. between hands
16 Hurdle jump over

Buck
No. 3

1 Jump from R. to L. foot on buck—hold—balance
2 Jump from L. to R. foot on buck—hold—balance

3 Jump from R. foot L. knee on buck and off
4 Jump from L. foot R. knee on buck and off
5 Jump from both feet to knees—without touching hands
6 Same—off R. side
7 Same—off L. side
8 Jump over—take off from R. foot
9 Jump over—take off from L. foot
10 Jump over—take off from both feet
11 Hurdle V.—legs over before hands touch
12 Straddle V. to seat—off
13 V. to seat between hands
14 V. between hands and ½ turn to R.
15 V. between hands and ½ turn to L.
16 Slide over and roll over
17 Jump from both feet to buck—hold—balance

Buck

No. 4

1 Jump from R. foot—twist to buck—back jump off
2 Jump from L. foot—twist to buck—back jump off
3 Straddle V. for distance
4 Straddle V., take off from both feet one or two yards from buck
5 V. to knees—jump to feet and off
6 V. to knees—and dive off
7 Straddle V.—twist and back roll over

8 Straddle V.—twist and vault back
9 Cut off R. hand—hold—legs horizontal—off
10 Cut off L. hand—hold—legs horizontal—off
11 Cut off both hands—hold—legs horizontal—off
12 Cut off R. hand—then L. to floor and vault
13 Back twist V. to R.
14 Back twist V. to L.
15 Dive over
16 Handspring

Buck
No. 5

1 Jump to buck—jump ½ turn to R.—back jump off
2 Jump to buck—jump ½ turn to L.—back jump off
3 Jump on buck and dive off
4 Back twist V. and back roll over
5 Shoulder stand
6 Neck spring
7 R. hand straddle V. and twist
8 L. hand straddle V. and twist
9 R. hand straddle V. and twist, L. hand V. back
10 L. hand straddle V. and twist, R. hand V. back
11 R. hand straddle V. and twist, R. hand V. back
12 L. hand straddle V. and twist, L .hand V. back

13 Hurdle V.—legs over—touch hands—½ turn to R.
14 Hurdle V.—legs over—touch hands—½ turn to L.
15 Straddle V.—kick buck with R. foot
16 Straddle V.—kick buck with L. foot
17 Straddle V.—kick buck with both feet
18 Handspring and roll over

Buck
No. 6

1 Straddle jump—twist—V. on buck—back jump off—½ turn to R.
2 Same to L.
3 Straddle jump—twist—and straddle jump back
4 Pivot V. to R.
5 Pivot V. to L.
6 Back twist V. and handspring back
7 Handspring and twist to R.
8 Handspring and twist to L.
9 Handstand
10 Push up to handstand
11 Handstand and straddle cut off
12 Handstand and cut off between hands
13 Vault between hands and push up to handstand
14 Leap to handstand
15 Backward somersault
16 Forward somersault

END SERIES

Parallel Bars

No. 1

1 Swing R. leg over R. bar and off to R.
2 Same L.
3 V. to straddle on bars and off to R.
4 Same L.
5 V. to sitting position to R. bar and off
6 Same L.
7 V. both feet on R. bar and jump off
8 Same L.
9 V. both legs on R. bar—full turn to sitting position and off
10 Same L.
11 V. to straddle on bars, hands in front and off to R.
12 Same L.
13 V. both legs on R. bar—turn to arms rest—push off backward
14 Same L.
15 Straddle across bars from end to end—straight arms and knees
16 V. both feet on R. bar—jump off backward
17 Same L.
18 V. both legs to sitting position on R. bar—fall back—bring legs up and snap off forward
19 Same L.

Parallel Bars

No. 2

1 V. both legs over R. bar—turn—push off—hands on R. bar
2 Same L.
3 V. both legs over R. bar—turn—snap under both
4 Same L.
5 V. both feet on R. bar—jump over L. bar
6 Same L.
7 V. both legs over R. bar—then V. both legs to L. over L. bar
8 Same other side
9 V. to sitting position on R. bar—legs inside—off to R.
10 Same L.
11 Same as No. 9—only off to L.
12 Same as No. 10—only off to R.
13 V. to straddle—hands in front—swing off between bars to R.
14 Same L.
15 Front walk to opposite end—parallel bar position—chest out—head up—knees straight and together—toes pointed down
16 V. both feet on bars—off R.
17 Same L.

Parallel Bars
No. 3

1 V. to R.
2 V. to L.
3 V. to R.—turn to R.
4 V. to L.—turn to L.
5 V. to R.—turn to L.
6 V. to L.—turn to R.
7 Walk across—two steps each hand
8 V. to R. for distance
9 V. to L. for distance
10 Walk across—three steps each hand
11 V. to R. face bars, snap under both
12 Same L.
13 Walk half way—turn 'round—walk off
14 Feet on bars—flex arms—off to R.
15 Same L.
16 V. to R. for distance—turn to R.
17 V. to L. for distance—turn to L.
18 V. to R. for distance—turn to L.
19 V. to L. for distance—turn to R.

Parallel Bars
No. 4

1 V. to sitting position on R. bar—hands in front—swing legs between—off to L.
2 Same from L. bar
3 Back walk across
4 Hand jump forward

5 V. to R.—one leg between
6 Same L.
7 V. both legs over R. bar—turn to arms rest —V. over both
8 Same L.
9 V. to feet on bars—knees straight—push forward (hand walk)
10 V. to straddle—hands in front—feet on bars—back straight—face down—walk forward on hands
11 V. to R.—one leg between—turn to R.
12 Same L.
13 Forward dip
14 V. to R.—one leg between—turn to L.
15 V. to L.—one leg between—turn to R.
16 Bicycle run across—stiff arms
17 Walk across—stiff knee movement

Parallel Bars

No. 5

1 V. to thighs on R. bar—hands in front—V. to L.
2 Same from L. bar
3 Long straddle—reach forward to ends of bars —face down—pull with arms—slide over ends
4 Swing dip—jump to straight arms
5 Dip—V. to feet—jump to R.
6 Dip—V. to feet—jump to L.

7 Swing dip—feet on bars to ends
8 Forward swing jump
9 Swing jump on backward swing
10 Combine Nos. 8 and 9
11 V. to sitting position on R. bar—roll off
12 Same L.
13 Easy kip at ends and off
14 Back V. to R.
15 Back V. to L.
16 Back V. to R.—turn out
17 Back V. to L.—turn out
18 Back V. to R.—turn in
19 Back V. to L.—turn in

Parallel Bars

No. 6

1 Pivot V. to R.
2 Pivot V. to L.
3 Front shoulder roll over
4 Swing dip to feet—walk across—handspring
5 Front shoulder roll—both legs to R.
6 Same L.
7 Pivot V. to R.—catch bar with L. hand
8 Pivot V. to L.—catch bar with R. hand
9 Front walk—down grade
10 Front walk—up grade
11 Shoulder stand
12 Sit on R. bar—hands in front—dip V. to L.
13 Same from L. bar

14 Chest stand—drop and catch
15 Shoulder roll—legs between bars
16 Back straddle to opposite end
17 "Grapevine"
18 Straddle forward—handspring from ends
19 Cut off both hands to straddle on bars—come to sitting position on R. bar—legs between—bend backward—hook toes under L. bar—hands to floor and down

Parallel Bars

No. 7.

1 V. to R.—V. between bars and over
2 Same L.
3 V. to sitting position on R. bar—roll over one movement
4 Same L.
5 Pivot V. from middle of bars to R.
6 Same L.
7 Back straddle to middle—twist—front straddle to ends and cut off
8 Grasp ends inside grip—swing forward—on backward swing cut off hands with legs
9 Three forward roll overs—handspring off
10 Three back roll overs—handspring off
11 Handspring off ends—with swing—bend arms
12 One kip on top of bars
13 Sit on R. bar—dip V. to L.—turn—back dip V. to R.

14 Half arm kip from ends
15 Long swing and straight arm kip
16 Cut off both hands with both legs—catch
17 Shoulder roll over—both legs to R.—turn—kip from side—(use feet) turn—roll off
18 Back handspring from ends

Parallel Bars

No. 8

1 Roll over—hook one leg on R. bar, backward turn—and off to R.
2 Same L.
3 V. to arms rest—back roll—kip up—repeat
4 Swing dip—straight knees—handspring off
5 Front walk—bent arm position
6 Kip at ends—three kips—handspring off
7 Back kip at ends
8 Back kip at ends—front kip—handspring off
9 Roll over—kip up—repeat to ends
10 Roll over—kip up—pivot V. to R.
11 Roll over—kip up—pivot V. to L.
12 Wrist grip on ends—turn back—feet to floor—kip—roll—and R. leg hook on R. bar—off side
13 Same from L. bar
14 V. to straddle on bars—"grapevine" to middle—back roll over and back handspring off
15 V. both legs over R. bar—turn—handspring off side of L. bar

16 Same L.
17 Hand stand

Parallel Bars

No. 9

1 Jump in between bars—turn—V. to R.
2 Same L.
3 Cut off R. hand—swing R. leg over both bars —then L. leg over both—twist on back swing —roll over and handspring off
4 Cut off R. hand with both legs (outward swing)
5 Same L.
6 Same R. (inward swing)
7 Same L.
8 Same as No. 4 backward handspring
9 Same as No. 6 back handspring
10 Cut off R. hand with both legs also L. hand in same swing (double cut off)
11 Roll over—straddle—roll forward and between without using hands—legs rigidly spread
12 Straight arm kip and hand stand from ends
13 Hand stand, walk across
14 Hand stand and cut off at ends
15 Hand stand and turn 'round (in middle)
16 Hand stand and slow spring from ends
17 Hand stand and straight arm spring from ends
18 Straddle roll over—kip—back "giant swing"
19 Back somersault from ends or side
20 Front somersault from ends or side

21 Hand stand on one bar—cut off
22 Somersault from arms rest swing in middle
23 Somersault from handstand

Parallel Bars

Middle Mounts

1 V. to sitting position on bar—same L.
2 Same as No. 1—swing legs over both bars—Same L.
3 V. feet on R. bar and over both
4 Same L.
5 V. to straddle on bars—bring legs together—drop through and catch with arms
6 Stand under bars—pull legs over head and over top of bars—hook heels under and come to straddle position—same from side
7 V. to R. over both bars
8 Same L.
9 V. between hands over both
10 V. feet between hands on 1st bar—jump over 2nd
11 Same as No. 10—handspring over 2nd bar
12 V. through hands over both
13 Grasp distant bar and circle both
14 Kip from side—V. to R. over both—same L.
15 Jump to sitting position—swing under—hook knees—let go hands—hook toes—rise above bars—off
16 Handspring over both bars—hands on 1st bar

SIDE HORSE

No. 1

1 V. straddle end push off
2 R. leg over end—off other side—same L.
3 V. straddle end—off side to R.—long horse to rear
4 Same L.
5 V. feet on horse and jump off
6 Same, ½ turn to R.
7 Same, ½ turn to L.
8 Same, full turn to R.
9 Same, full turn to L.
10 V. straddle end—forward off—long horse to rear
11 Same other end
12 V. R. foot to R. on horse—off
13 Same L.
14 V. both feet to R. on horse—off
15 Same L.
16 V. feet to straddle on horse—off
17 Reverse grip—front horizontal
18 Slide over and roll over

Side Horse

No. 2

1 V. to R.
2 V. to L.
3 V. through hands
4 R. leg over cut off R. hand—L. leg over and off

5 Same L.
6 Straddle V.
7 V. on horse—jump—touch toes
8 V. on horse—jump—touch heels
9 Same, hands high over head
10 Run, jump on horse from R. foot
11 Run, jump on horse from L. foot
12 V. to R.—legs straight
13 V. to L.—legs straight
14 Straddle V.—twist to R.
15 Straddle V.—twist to L.
16 Hurdle over from R. foot
17 Hurdle over from L. foot
18 Straddle end "scissors" and off
19 Mount R. end—R. leg to horse—swing L. over—"scissors"—swing to opposite end—off backwards—same L.

Side Horse

No. 3

1 Flat foot jump on horse
2 Flat foot jump over horse
3 V. one leg through to R.
4 V. one leg through to L.
5 R. leg over end and V. to L.
6 L. leg over end and V. to R.
7 V. to R.—arms bent feet high
8 Same L.
9 Hurdle V. through hands

10 Same, twist to R.
11 Same, twist to L.
12 R. hand turn V. (R. hand inside grip)
13 Same L.
14 Straddle V.—twist—V. back
15 V. to R.—back V. back
16 Same L.
17 Straddle V. both hands on R. pommel
18 Same L.

Side Horse

No. 4

1 V. through pommels to sitting position—throw R. leg back—push off end
2 Same, throwing L. leg back
3 V. to arms rest—R. leg pivot (cut off both hands with R. leg)
4 Same with L.
5 V. to R.—cut off R. hand to sitting position—turn—straddle L. end—hands on pommels—V. to R.
6 Same L.
7 V. to R.—cut off R. hand to sitting position—L. leg over backwards—about face—R. leg over L. end to straddle—½ pivot V. to L.
8 Same from other end
9 Throw legs to R. without touching legs to horse—cut off both hands—to first position
10 Same L.

11 Pivot V. to R.
12 Pivot V. to L.
13 Straddle end—V. between pommels
14 Same, other end
15 Dive over
16 Handspring
17 Neckspring

Side Horse

No. 5

1 V. and repeat to R.
2 Same L.
3 V. to R.—back to L.
4 V. to L.—back to R.
5 Repeat No. 1 and V. through hands
6 Same L.
7 Repeat No. 1 and straddle V.
8 Same L.
9 V. through hands—turn—V. through hands—turn—slide and roll over
10 V. through hands and back V. through hands and handspring over
11 Front horizontal V. through hands
12 Straddle V. twist and repeat—handspring
13 Handstand on floor—back to horse—come to sitting position—balance and off
14 Pivot V. to R. and straddle L. end
15 Pivot V. to L. and straddle R. end

Side Horse

No. 6

1 Handstand V. to R.
2 Handstand V. to L.
3 V. one leg through hands—come to straddle on end—"scissors"—feet on horse and handspring off end
4 Same, off opposite end
5 Handstand and cut off (feet between hands)
6 Handstand
7 One arm balance—twist off
8 V. to arms rest—push up to handstand
9 V. to sitting position between hands and push up to handstand
10 Straddle V.—twist—handstand—come to sitting position between hands—back roll off
11 Handstand and straddle cut off
12 Handstand and turn 'round
13 Handstand—come to straddle on end—back roll off
14 Back somersault from horse
15 Front somersault from horse

Long Horse

No. 7

1 V. to straddle and off
2 Same with "scissors"
3 V. to feet on horse and run over
4 V. to feet on horse—straddle V. over end

5 V. to R.
6 V. to L.
7 V. on end—pivot V. to R.
8 Same L.
9 V. to feet on horse—run across—all fours
10 Run—leaping V. to center of horse—let legs come down to R.
11 Same L.
12 Side V. to R.—R. hand on horse—R. leg first
13 Same L.
14 Run, leaping V.—hands to center of horse—cross or "scissors" legs in air—come to straddle position—off
15 Roll over to straddle
16 Roll over—both legs to R.
17 Roll over—both legs to L.
18 Side jump to R. on horse
19 Side jump to L. on horse
20 Side jump to R. over horse
21 Side jump to L. over horse
22 V. feet on horse—handspring off end
23 Long V. over
24 Long V.—"scissors"—light facing horse
25 Long leaping handspring
26 Long dive over
27 Shoulder stand

Side Horse—Miscellaneous

No. 8

1 V. to knees and off

2 V. to knees—jump to feet and off
3 Back roll off
4 Straddle R. end—swing to opposite end—straddle and off
5 Same L.
6 V. through hands—turn—push off
7 V. to R. (one hand)
8 V. to L. (one hand)
9 V. to R. (one hand) touch toes
10 V. to L. (one hand) touch toes
11 R. hand ½ pivot V.
12 L. hand ½ pivot V.
13 R. hand V. to feet on horse
14 L. hand V. to feet on horse
15 R. hand V. face horse
16 L. hand V. face horse
17 R. hand straddle V.
18 L. hand straddle V.
19 R. hand straddle V.—twist to R.
20 L. hand straddle V.—twist to L.

HORIZONTAL BAR

No. 1

1 Hang by hands—bar position
2 Hang by R. hand
3 Hang by L. hand
4 Hang—draw knees up 3 times
5 Hang—draw R. knee up—extend leg
6 Hang—draw L. knee up—extend leg

7 Raise legs up—knees bent—touch toes to bar
8 Chin bar 3 times
9 Same with reverse grip
10 Chin up—draw knees to chin
11 Chin up 3 times—changing grip each time
12 Hands together—chin up—hands apart—down —and repeat
13 Swing—opening and closing legs at end of each swing
14 Swing—moving from R. to L. with both hands
15 Chin up—rise above bar—R. elbow first
16 Same L.
17 Chin bar—hand walk from side to side

Horizontal Bar

No. 2

1 Swing drop on forward swing
2 Swing drop on backward swing
3 Forward swing ½ turn to right
4 Same to left
5 Backward swing ½ turn to right
6 Same to left
7 Chin up
8 Chin up—let go left hand and hold with right
9 Same with other hand
10 Chin up—bring knees to chest
11 Chin up—legs to front horizontal
12 Chin up—right arm over bar, then left and push to arms rest

13 Circle or curl through hands
14 Same, and back again
15 Same, let go right hand—let go left
16 Chin up—reverse grip
17 Back swing for distance ½ turn to R.
18 Same L.

Horizontal Bar

No. 3

1 Standing under bar—jump—big swing
2 Distance jump for bar—R. leg on and over
3 Distance jump for bar—L. leg on and over
4 Distance jump for bar—R. leg on—turn—sit on bar
5 Distance jump for bar—L. leg on—turn—sit on bar
6 Distance jump for bar—R. leg on L. over—sit on bar
7 Distance jump for bar—L. leg on R. over—sit on bar
8 Combined grasp—change on back swing
9 Jump for bar, swing both legs over and off
10 Same, with legs between hands
11 Jump for bar—curl through hands—off on back swing
12 Swing—clap hands together—catch
13 Movement for kip—elbows and knees stiff—bring feet to bar
14 Swing—touch hands to chest—catch again
15 Same, touch hands to thighs

Horizontal Bar

No. 4

1 Pull up right, left hand grasping wrist
2 Same with other hand
3 Hang arms length, legs to front horizontal
4 Hang by legs at knees
5 Same, remove right and back, remove left and back
6 Chin up—bring knees to chest and slow circle over
7 Hang at arms length, legs to front horizontal and slow circle over
8 Jump, catch bar and quick circle over
9 Same with free circle
10 Front circle
11 Shoulder dislocate
12 Right leg get up
13 Left leg get up
14 Same between hands with right leg—same with left leg
15 Both legs get up between hands

Horizontal Bar

No. 5

1 Both legs get up legs outside of hands
2 One leg get up on back swing
3 Same with left
4 Same, right leg between hands
5 Same, left leg between hands

6 Both legs get up on backward swing—legs between hands
7 Same, legs outside of hands
8 Right knee whirl (or circle)
9 Same with left
10 Right knee whirl backwards
11 Same with left
12 Double knee whirl forward—legs between hands
13 Same backwards
14 Same forward, legs outside of hands
15 Same backwards
16 Two circles—one movement
17 Circle bar to sitting position—to R.
18 Same L.

Horizontal Bar

No. 6

1 Swing drop from knees
2 Same from top of bar
3 Still drop from knees
4 Right leg swing drop
5 Left leg swing drop
6 Right leg still drop
7 Left leg still drop
8 Swing drop turn and catch bar
9 Same to left
10 Sit on bar, grasp with both hands, pull legs back and off

11 Straddle to top of bar, swing backward and cut off
12 Swing ½ turn and catch
13 Pull up to arms rest
14 "Shoot through"
15 Back roll off

Horizontal Bar
No. 7

1 Front roll off
2 Elbow and back revolve
3 Hand and back revolve
4 Knee and elbow revolve
5 Stomach, elbow and thigh revolve
6 Full circle from knees
7 Hand knee and toe revolve "angel"
8 Feet and hand revolve cut off
9 Feet and hand revolve backward
10 Same forward
11 Hand and toe revolve
12 Swing kip
13 Short kip
14 Still kip
15 Long swing pull up kip
16 Kip—repeat three times
17 3 kips full arm—2 kips close to bar
18 On back swing, put feet to bar—sole cut off

Horizontal Bar
No. 8

1 Back kip

2 Kip—right hand top grip, left hand under grip, swing, turn and kip
3 Kip—both hands under grip
4 Half knee circle—change from side to side
5 Right cross leg, get up
6 Left cross leg, get up
7 Slow pull up (shoot through)
8 Same with reverse grip
9 "Shoot through" without touching bar
10 Crotch whirl—forward—backward—side ways
11 One knee whirl, bring other leg over
12 Same with other leg
13 Swing from knees and back pull off
14 Same and catch bar
15 Toe cut off
16 Jump for bar—rise above bar with reverse grip
17 One kip—one under bar—long pull up
18 Kip—R. heel on bar
19 Curl between hands—rise above bar
20 Kip—sit on bar—fall back

Horizontal Bar

No. 9

1 Short swing and somersault
2 Sit on bar and roll off backwards
3 Kick off
4 Sit on bar and kick off
5 Forward cut away

6 Hand and heel revolve and cut off
7 Handstand
8 Kip and handspring
9 Kip, handstand and cut off
10 Fly away
11 Back somersault from top of bar
12 Forward somersault from top of bar
13 Front giant swing
14 Back giant swing
15 Double giant swing

HORIZONTAL LADDER

No. 1

1 Walk across—hands outside
2 Walk across—hands inside
3 Walk across—alternate No. 1 and No. 2
4 Walk across—on R. side—R. hand leading
5 Walk across—on L. side—L. hand leading
6 Walk across—on rounds—forward
7 Walk across—skipping one round each time—forward
8 Repeat No. 1 backwards
9 Repeat No. 2 backwards
10 Repeat No. 3 backwards
11 Repeat No. 6 backwards
12 Repeat No. 7 backwards
13 Swing, jump forward
14 Swing, jump backward
15 Side jump to R.

16 Side jump to L.
17 Front walk ½ arm
18 Back walk ½ arm
19 Curl through—hook toes in rounds
20 From top of ladder—come down between rungs
21 From top of ladder—front horizontal down over side

Horizontal Ladder

No. 2

1 Walk across—changing from rounds to outside of ladder
2 Forward jump across—hands outside
3 Forward jump across—hands inside
4 Forward distance jump—catching rounds—then outside
5 Forward distance jump—catching first outside then rounds
6 Alternate jumps from rounds to outside
7 Side to side jump—forward and backward
8 Walk across—legs front horizontal
9 Jump—catch outside—curl through and back
10 Jump—catch outside—curl through, drop and repeat
11 Hands outside, rise above and sit on bars
12 Front walk—knees up
13 Back walk—knees up
14 Front jump—knees up

15 Back jump—knees up
16 Legs over sides—hook toes—come to sitting position on top of ladder
17 Wrist kip on side
18 Pull up between rungs to top

Horizontal Ladder

No. 3

1 Forward walk across, up grade
2 Forward walk across, down grade
3 Forward walk across, down, up and down
4 Forward walk across, up, down and up
5 Circle through, drop and catch again on same jump
6 "Cork-screw"
7 Repeat No. 5 three times
8 Catch bars, curl through, let go first R. and then L.
9 Forward jump for distance
10 Side walk across, elbows R. angle, legs horizontal
11 Forward walk across on one bar
12 Back jump and rise above bar
13 Grasp side with R. hand—hold R. wrist with L. hand—front jump
14 Same, reverse hands
15 Same, back jump
16 Same, back jump, reverse hands
17 Circle over side—front horizontal down

18 Kip on side—push with feet from opposite side
19 Same as No. 8 inside grip
20 Grasp rung with hands—swing feet up—turn—hook toes—face down
21 Circle to top of ladder through rungs
22 From top of ladder—come down head first through rungs

MAT WORK AND PRIMARY TUMBLING

No. 1

1 Straight jump forward
2 Side jump to right
3 Same to left
4 Backward jump
5 Forward jump and ½ turn to right
6 Same to left
7 Forward jump and full turn to right
8 Same to left
9 Jump, touch toes with hands
10 Jump, touch heels with hands
11 "Frog jump," feet outside of hands
12 Same, feet between hands
13 Walk forward on all fours—knees straight and elbows straight, hands close to feet
14 Same backward
15 Jump—reach arms high over head
16 Jump—strike heels twice
17 Jump—strike heels three times

Mat Work and Primary Tumbling
No. 2

1 Forward hop right foot
2 Same with left
3 Side hop with right foot
4 Same with left
5 Backward hop with right foot
6 Same with left
7 Right foot hop and ½ turn to right—same to left
8 Left foot hop and ½ turn to left—same to right
9 Right foot hop and full turn to right—same to left
10 Left foot hop and full turn to left—same to right
11 Walk sideways on all fours—knees straight, elbows straight, hands close to feet
12 Same to left
13 "Frog jump" with right foot
14 Same with left
15 Run on all fours
16 Hop R. foot and step
17 Hop L. foot and step
18 Hop R. foot and step and jump
19 Hop L. foot and step and jump

Mat Work and Primary Tumbling
No. 3

1 Frog jump backwards, feet outside of hands

2 Same, feet between hands
3 Frog jump forward with right hand and right foot
4 Same with left
5 Walk on all fours—"Crab crawl"
6 "Lizard crawl"
7 Jump—fall forward—back straight—catch with hands
8 Stand on right foot—swing to sitting position—lay flat on back and up to stand again without the use of hands
9 Same with left
10 Lay flat on stomach, jump through hands
11 Work in pairs—No. 1 grasps No. 2's ankles, No. 2 walks on hands face down "Wheelbarrow"
12 Same, face up
13 Shoulder—relay race
14 Crotch lift and walk off
15 Hop, skip and a jump

Mat Work and Primary Tumbling
No. 4

1 Roll over
2 Back roll over
3 Dive—for distance—for height
4 Roll over—hold toes
5 Roll over—hands back of heels
6 Roll over—arms folded
7 Roll over—turn and back roll over

8 Roll over and dive
9 Roll over and front walk on all fours
10 Roll over and forward fall—back straight
11 Roll over and frog jump
12 Roll over from one foot—arms horizontal—same with other
13 Head stand
14 Zig-zag jump
15 Snap jump from hands to feet and from feet to hands, and so on
16 Roll over—hands outside of ankles
17 Roll over—hands between knees
18 Handstand
19 Roll over and handstand
20 Handstand and roll down
21 Handstand and roll over

Mat Work and Primary Tumbling

No. 5

1 Cartwheel to right
2 Same to left
3 Jump to handstand and roll down
4 Run, dive and twist
5 Half somersault—light on shoulders and back
6 Head spring
7 Neck spring (snap up)
8 Head spring and roll over
9 Head spring and dive
10 Head spring and feet and hand snap up

11 Head spring, dive, jump through hands and snap up
12 Handspring
13 Handspring, body straight
14 Leaping handspring
15 Front somersault
16 "Round off"
17 Back somersault
18 "Round off" and back somersault
19 Hand walk forward—second, backward

Mat Work and Primary Tumbling

No. 6

1 Work in pairs: No. 1 stands on hands and spread legs, No. 2 grasps No. 1's heels—crotch at small of back—lift and walk off
2 No. 1 lies on back, lifts feet and hands, No. 2 does handspring over
3 Same backwards
4 No. 1 lies on back—arm to arm stand
5 No. 1 lies on back, knees up—No. 2 does handspring from knees
6 No. 1 lies on back and lifts legs, grasps No. 2's ankles—No. 2 grasps No. 1's ankles and front roll over
7 Same backwards
8 No. 1 bends knees—No. 2 steps one foot on No. 1's thigh and hooks other foot around neck—side horizontal balance

9 No. 1 locks leg round No. 2's waist, bends backward—No. 2 comes forward on all fours—No. 1 grasps heels of No. 2 and straightens arms—then "Elephant walk" forward
10 Leg wrestling
11 No. 1 rolls over, spreads legs, No. 2 dives over No. 1
12 No. 1 lies on back, No. 2 stands in hands of No. 1—No. 2 jumps up and No. 1 pushes with arms to vertical
13 No. 1 vaults over No. 2's head from sitting or lying position
14 Head balance
15 Shoulder handspring

Mat Work and Primary Tumbling

No. 7

1 Three hops R. foot
2 Three hops L. foot
3 Three long strides across
4 Jump over object
5 R. hop over object
6 L. hop over object
7 Hurdle over two objects
8 Jump over two objects
9 Hop over two objects R. foot
10 Hop over two objects L. foot
11 Hurdle over three objects

12 Jump over three objects
13 Hop over three objects R. foot
14 Hop over three objects L. foot
15 Hurry over ten times, quick succession

FLYING RINGS

No. 1

1 Chin up
2 Chin up and extend left arm
3 Same and extend right arm
4 Cut off right arm with right leg—same with swing
5 Same with left
6 Curl feet over head to floor
7 Same and back to first position
8 Back dislocate
9 Front dislocate
10 Swing and chin up on forward swing
11 Same—chin up on backward swing
12 Swing—pull knees to chest
13 Swing—chin up—pull knees to chest
14 Jump to arms rest
15 Pull to arms rest

Flying Rings

No. 2

1 Cut off right arm with both legs—same, catch ring again
2 Same with left

3 "Crab"
4 Crotch horizontal
5 Head and feet horizontal
6 Same, face down
7 Front roll both legs through rings
8 Same with right leg
9 Same with left leg
10 Back cut off
11 Cut off both hands with both legs
12 Same, and catch rings
13 Half arm kip
14 Swing and center jump back dislocate
15 Same, front dislocate
16 Knees in rings—stand—horizontal on ropes

Flying Rings

No. 3

1 Swing and pump
2 Swing and pull up on forward swing (to arms rest)
3 Same on back swing
4 Swing and kip on forward swing
5 Same on back swing
6 Swing and front dislocate on forward swing
7 Same on back swing
8 Swing and back dislocate on forward swing
9 Same on back swing
10 Swing and cut off on forward swing
11 Same on back swing

12 Swing and both legs cut off on forward swing
13 Same on back swing
14 Swing and both legs cut off on forward swing and catch rings
15 Same on back swing
16 Hang by toes
17 Hang by toes—swing

Flying Rings

No. 4.

1 Swing and "crab"
2 Swing and crotch horizontal
3 Handstand
4 Swing and handstand
5 Hang in rings with right hand and left foot
6 Same with opposite hand and foot
7 Swing and front dislocate and both legs cut off
8 Same, and catch rings after cut off
9 Back kip
10 Back kip to handstand
11 Shoulder roll forward with hands
12 Back kip and horizontal balance—face up
13 Fly away on forward swing
14 Back cut away on backward swing
15 Maltese cross

PULLEY WEIGHT EXERCISES

First series

Position: Stand erect facing machine, arms straight, front horizontal, hands even with shoulders, pull handles:

1 Down to toes
2 By sides
3 To vertical overhead
4 Combine 1 and 2
5 Combine 2 and 3
6 Combine 1 and 3
7 Biceps move—pull handles to shoulders
8 Biceps move, combined with No. 1
9 Biceps move, combined with No. 2
10 Biceps move, combined with No. 3
11 Side and loin move—pull handles to R., both arms straight and parallel with floor, alternate to L.
12 Side and loin move, combined with No. 1
13 Side and loin move, combined with No. 2
14 Side and loin move, combined with No. 3
15 Deltoid move—pull handles to side horizontal
16 Deltoid move, combined with No. 1
17 Deltoid move, combined with No. 2
18 Deltoid move, combined with No. 3
19 Repeat No. 2 (prevents and corrects stooping shoulders)

(Note: All chest weight exercises should terminate with No. 2, throwing shoulders well back and chest forward.)

Second series

Position: Back to machine, arms straight and well back without bending body, pull handles:

1 By sides to front horizontal
2 From side horizontal to front horizontal
3 From vertical to front horizontal
4 Combine 1 and 2
5 Combine 2 and 3
6 Combine 1 and 3
7 R. arm vertical over head, L. arm down by side, pull R. down and L. up, R. and L. alternately changing positions (ropes close to arms)
8 Triceps move—handles just above shoulders, elbows front, straighten arms (1st, with knuckles toward face; 2nd, knuckles away from face; 3rd, alternate)
9 Triceps move combined with No. 1
10 Triceps move combined with No. 2
11 Triceps move combined with No. 3
12 No. 1, with half squat
13 No. 2, with half squat
14 No. 3, with half squat
15 No. 1, step R. foot forward, alternate L.
16 No. 2, step R. foot forward, alternate L.
17 No. 3, step R. foot forward, alternate L.
18 No. 2, step R. foot to R.
19 No. 2, step L. foot to L.

20 Alternate 18 and 19
21 No. 2, from first series

Third Series—Miscellaneous Combinations

Position: Facing machine, pull handles:

1 R. arm up, L. down, alternate
2 Cross arms, alternating R. and L. over and under
3 Curl handles to chest (elbows out)
4 Pull handles to toes, step R. foot to R., alternate L.
5 Pull handles by sides, step R. foot back, alternate L.
6 Pull handles to vertical, step R. foot back, alternate L.
7 Pull handles to arms side horizontal, step R. foot back, alternate L.
8 Pull both handles to R. (straight arms), step R. foot R., alternate L.
9 Pull both handles to R. diagonally toward floor, alternate L.
10 Pull handles to toes with half squat
11 Pull handles by sides with half squat
12 Pull handles to vertical with half squat
13 Pull handles to side horizontal with half squat
14 Pull handles to R. side with half squat, alternate L.
15 Pull handles to R. diagonally toward floor, with half squat, alternate L.
16 No. 2, from first series

Fourth series

Position: Stand erect, R. side to the machine, pull handle:

1 To side (straight arm)
2 In front of hips (straight arm)
3 Back of hips (straight arm)
4 To front horizontal (straight arm)
5 To vertical over head (straight arm)
6 To shoulder (by bending arm)
7 To L. shoulder (across chest, by bending arm)
8 To rear (arm parallel with floor)

(Note: Make the various combinations with the above moves; for example, combine 1 and 3, 2 and 4, etc. Also combine the foregoing with steps to front, side, and back.)

(Note: After executing the exercises with the R. hand, do the same with the L.)

9 No. 2 from first series

Fifth series

Intercostal and trapezius—overhead pulleys

Position: Stand erect under handles, grasp and pull

1 To floor in front (bend back, straight arms)
2 To floor on R. side (bend back, straight arms)
3 To floor on L. side (bend back, straight arms)
4 To sides, through side horizontal (body erect, arms straight)

5 To sides, through front horizontal (body erect, arms straight)
6 To side horizontal (body erect, arms straight)
7 To front horizontal (body erect, arms straight)
8 To side horizontal (bending backward)
9 Down in front of face, up straight arms
10 R. arm down, then L., alternate
11 To sides through front horizontal, up in front of face
12 Same through side horizontal
13 To toes through side horizontal (bending body)
14 Same, bring handles up in front of face
15 Reach and stretch

(Note: These exercises should be practised free hand, if there are no chest machines.)

WANDS

First series

Position: Wand in front; counts, 1-2

1 Bend forward
2 Lift wand over head
3 Lift wand to R. side—shoulder high
4 Lift wand to L. side—shoulder high
5 Lift wand in front—shoulder high bending arms
6 Swing wand to R. side—even with hips
7 Swing wand to L. side—even with hips
8 Lift R. hand even with L. shoulder—bend R. arm
9 Same L.
10 Alternate 8 and 9

Second series

Combine the movements of the 1st series, counting 1-2-3-4. For example, combine 1 and 2:

Bend forward—1—original position—2—lift arms over head—3—original position—4

Third series

Position: Wand over head; counts, 1-2

1 Bend forward
2 Bend to R. side (wand side R. foot)
3 Bend to L. side (wand side L. foot)
4 Alternate 2 and 3

5 Bend sideways to R.—bringing wand to vertical
6 Bend side ways to L. bringing wand to vertical
7 Alternate 5 and 6
8 Twist wand R. to L.—L. to R.—arms straight over head
9 Twist body R. and L.—arms straight, without moving arms—except movement natural to body
10 Bend backward

Fourth series

Combine the movements of 1st series with stepping (charging) to front, sides and rear, counting 1-2-3-4.

For example: (a) Step R. foot front, bend forward. (b) Step to side (R. or L.), lift wand over head. (c) Step to rear. (R. or L.) Lift wand in front—shoulder high.

Fifth Series

Position: Wand in front counts, 1-2-3-4

1 Point L. foot and L. hand to L. side—1—feet together, wand over head—2—point R. hand and R. foot to R.—3—position 4
2 Same exercise, starting on R. side
3 Cross R. arm and R. leg over L.
4 Cross L. arm and L. leg over R.
5 Charge R. arm and R. foot forward—gun

position (sweep from side to side)

6 Same L.

7 Charge R. foot to rear—dislocate—bringing wand to back

8 Same L.

9 Alternate

10 Same as No. 7; let go L. hand, swing wand to front, at same time charge R. foot forward, lift wand over head, bring wand to position and feet together

11 Charge R. foot about face to rear, gun position, touch point to floor

12 Same L.

13 Same as No. 11, raise point to vertical

14 Same L.

15 Charge R. foot to L. (cross legs), cross arms, touch point to floor

16 Same L.

17 Same as No. 15, cross legs to rear

18 Same L.

19 Charge R. foot to rear, diagonally to L., at same time lifting arms to horizontal, about face, swinging wand to gun position

20 Same L.

21 Cross R. arm and R. leg to L., let point of wand and knee touch floor, about face, straighten up, let go L. hand, grasp wand again behind back, cross legs again, let go L. hand, about face to original position

22 Same L.

23 Alternate

Sixth Series

Position: Wand in front, reverse grip, wrist-twist moves, charging front, sides and rear

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